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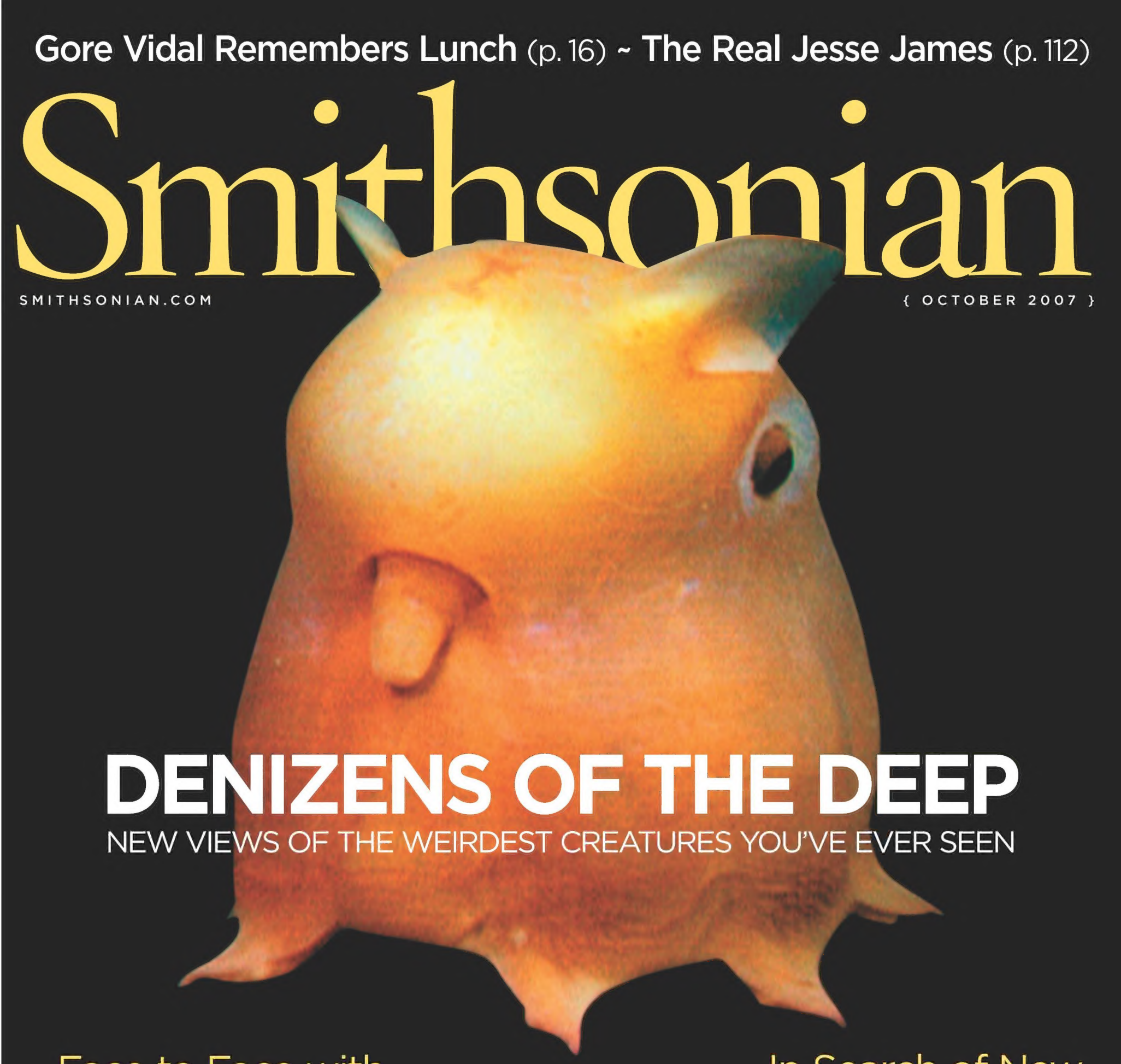

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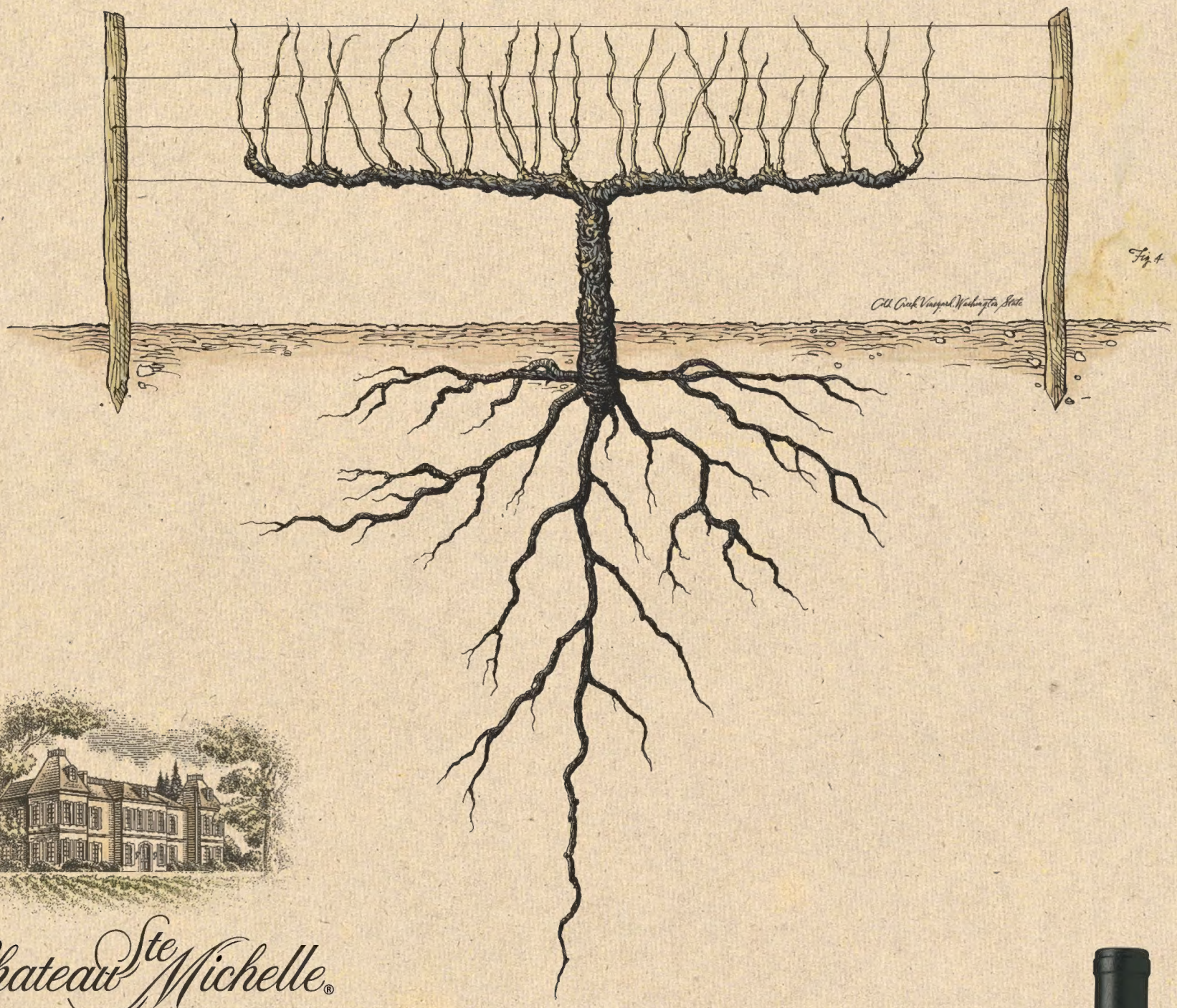

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Ten yards ahead, Humba yanks aside the creepers to stare at us. His body ripples with power, and his massive head has the gravitas of a Mount Rushmore president.

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THIS PAGE: Today only 750 mountain gorillas exist in the wild, their numbers drastically reduced by poaching, disease, habitat loss and the violence of war. Photograph by Andy Rouse / Corbis.

COVER: The Dumbo octopus, so-named for its odd "ears," spends most of its time resting on the ocean floor. Photograph © 1999 MBARI.

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"I don't know if he's a religious figure, or a fanatic, but there's something kind of spiritual about him."

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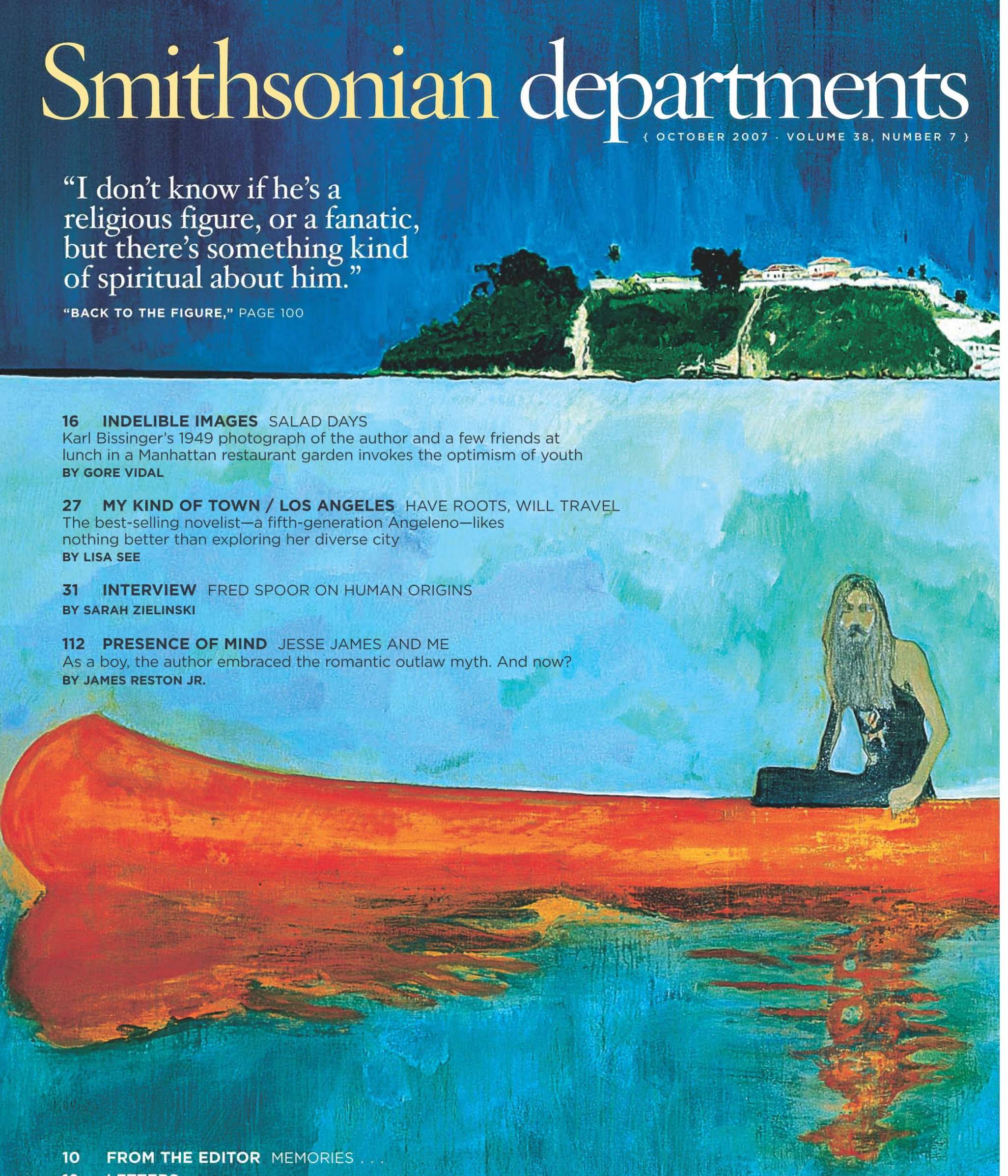

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FROM THE EDITOR

Memories . . .

. . . Of a lost father, an abandoned airplane and a composer's dilemma **BY CAREY WINFREY**

JOHN DARNTON—who won a Pulitzer Prize for his coverage, for the *New York Times*, of the Solidarity movement in Poland—is writing a book about his father, also a *New York Times* correspondent. The senior Darnton was killed by shrapnel in 1942 on a transport ship off the coast of New Guinea while covering the war in the Pacific. Says John: "It's going to deal with how somebody you don't know—I was 11 months at the time of his death—could be such a formative influence in your life." And, he adds: "For the last four years or so, I've realized that I had to go to the place where it occurred."

Even before he left for Papua New Guinea last May, Darnton began hearing about a crashed U.S. World War II bomber there—known, intriguingly, as the "Swamp Ghost." Some airplane salvagers wanted to take it out of the country, but others felt that moving it would be a sacrilege. Darnton looked into the story and discovered that airplane salvagers are a breed apart. "When they hack their way through the jungle and come upon a wreck, and crawl over it and maybe sit in the cockpit, they get an incredible feeling, as if they've discovered a time capsule," he says. "They try to figure out how the plane went down, what the pilot did—did he try to eject?—and they feel the thrill of the treasure hunter." Darnton thought he might like to write about the Swamp Ghost. Would SMITHSONIAN be interested in a story that would weave his search for information about his father into the salvage controversy? Uh, *yeah*! The result, "Swamp Ghosts," begins on page 76.

Darnton (in Papua New Guinea): "I realized that I had to go."

MICHAEL WALSH is the author of *Andrew Lloyd Webber: His Life and Works, A Critical Biography*. Webber's breakthrough musical, *Cats*, opened in New York City 25 years ago this month. Audiences flocked to it; critics hated it; in June of 1997, it became the longest-running musical in Broadway history. (It racked up 7,485 performances before closing in September 2000.) "That's the musical that made him very wealthy," says Walsh. "It was also the one nobody thought would work, that people thought would be the end of him." More important, Walsh adds, "it's the show that symbolizes this conflict with him: 'Should I write a great opera or should I please the public?' That is something that composers are always grappling with, and that's why *Cats* makes a good introduction to the central conundrum of his life." "The Curiosity of *Cats*" begins on page 88.

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NINA DARNTON

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LETTERS READERS RESPOND TO THE **AUGUST** ISSUE

FISH STORY
Smithsonian
AMERICANS IN PRAGUE
INSIDE THE CZECH CAPITAL'S CULTURAL RENAISSANCE
Native trout are returning to America's rivers and streams, thanks to new thinking by scientists and conservationists
BY ROBERT M. POOLE

The so-called "sport" of catch-and-release fishing is nothing less than the heartless torture of innocent animals for the questionable pleasure of human beings who should know better ("Fish Story"). Fishing for sustenance is one thing. Anything else is decidedly unsportsmanlike.

CHRIS GLENN, BADGER, CALIFORNIA

UNHOOKED

FISH CAUGHT WITH barbed hooks and then released are often marred by open sores, some of them quite extensive. Barbless hooks can minimize the disfigurement. Anglers should be encouraged to use them as a matter of conscience. Since I switched to barbless hooks, I have not noticed any increase in missed hookups or lost fish. And barbless hooks are much easier to unhook from fish, trees, clothing—and ears.

SKIP MACKEY
MELBOURNE, FLORIDA

PAPA'S CUBA

THERE IS A HUGE difference between Ernest Hemingway's Cuba and the Cuba that Valerie Hemingway visited 47 years later. All the customers that shared a daiquiri with Ernest Hemingway in the Floridita or a room in the Ambos Mundos Hotel or any other place in Havana were native Cubans. Today, it's mostly tourists from other countries with their pockets full of capitalist American dollars who can enjoy those simple things.

MIGUEL A. ECHENIQUE
MIAMI, FLORIDA

TAKING ATLANTA'S TEMPERATURE

I HAVE LIVED in metropolitan Atlanta for 45 years ("Some Don't Like It Hot"). Yes, it's too hot in the summer. But a big plus for me is the multicultural, multiracial population. There have been problems, and still are, but Atlanta is living out the spirit of our forefathers, whose dream of a place where all people are created equal is realized. So y'all come see us. Just not in July or August.

MARGARET MORRIS
CONYERS, GEORGIA

WHY'S ATLANTA so hot? Old photos of the city show a tree-friendly area. Not so anymore. Suburban development cuts down large shade trees, which provide wonderful breeze potentials near a house, a feature that pioneer folk knew something about before air conditioning. We have foolishly divorced ourselves from the friendly physics of keeping cool.

MIKE REID
SHERIDAN, OREGON

MODEL COWBOY

MY GRANDFATHER, the artist Allen Tupper True, was the unnamed model wearing "full cowboy regalia" in the photograph accompanying the "Around the Mall" story about Liza Kirwin's book *Artists in Their Studios*. But the studio in the photograph was not in Denver, as stated. Nor was it N. C. Wyeth's. Rather, the studio was at Howard Pyle's school in Wilmington, Delaware. Wyeth and True were fellow students at the school and would be close friends throughout their lives.

VICTORIA TUPPER KIRBY
SAN FRANCISCO, CALIFORNIA

Curator Liza Kirwin, of Smithsonian's Archives of American Art, responds: Thanks for setting me straight about the studio's location. And I am glad to know that the cowboy is your grandfather. We will change the location of the photograph on our Web site.

SMILE. PLEASE?

PSYCHOLOGIST Dacher Keltner misses the point when he says it's alienating for managers to "order their subordinates to smile" ("What's Behind a Smile?"). At my shop, all customers are greeted with a smile. If I had a dollar for every frowning customer who has reacted positively to friendliness, I'd be rich. Hey, I already am: I enjoy my shop so much more because of the power of smiling.

JANET SHELTON
CANNON BEACH, OREGON

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HYUNDAI

Salad Days

The author at lunch, New York City, 1949

BY GORE VIDAL

KARL BISSINGER / CATHERINE JOHNSON ART

FLEUR COWLES, an energetic publisher from a publishing family, decided she wanted a totally new magazine to symbolize the victorious, new America that, as of 1948, was all aglitter in all of the arts, including some where we had had little presence before World War II. Hence the creation of the legendary *Flair* magazine, for which Karl Bissinger was hired as a staff photographer. After some years immortalizing this flourishing world for *Flair* and others, he abandoned his artistic pursuits to work for the American Friends Service Committee and the War Resisters League, clipping his marvelous talents prematurely and leaving us to cherish that lost world he captured on film as much as anyone ever could.

So there we sat one day in the Manhattan garden of the Café Nicholson: Tanaquil Le Clercq of Balanchine's ballet company; Buffie Johnson, a painter; writers Donald Windham, Tennessee Williams and me. For me, Karl Bissinger's picture is literally historic, so evocative of a golden moment when we were neither at war—our usual condition, it now appears—nor in a depression. Look at the civilization we could have created!

I don't know what effect the picture has on those who now look at it, but I think it perfectly evokes an optimistic time in our history that we are not apt to see again soon. And it reminds us that, seemingly out of nowhere, came a great ballerina; one of the first well-known women painters; a good novelist, Mr. Windham; and our greatest playwright, Tennessee Williams. This was pretty good for a summer's day in the garden of a New York City brownstone.

Since that day in 1949, there have been, obviously, other interesting figures added to the scene, but none has the power of what I like to think of as the cultural genesis of the United States as depicted by Karl Bissinger. For instance, later figures did not have the gift of his presence and his art. We were not from the planet Mercury, we were homegrown, and the home was a great success for many of us, and we continued to produce in the world of the arts ever more interesting works until our leaders decided it was time for us to go to war again; this time, Korea would be the lucky venue. And off to war we went, and we have not ceased to be fighting wars, many of them quite illegal, ever since. So study this picture, and see what optimistic people looked like as they began what they thought would be lifelong careers, and in some cases indeed lasted as we lost more and more of a country that is no country without Karl Bissinger to make art of it. Where is Johnny Nicholson's garden today?

GORE VIDAL, *who published his first novel,* Williwaw, *in 1946, lives in Los Angeles.*

Creativity Manhattan style, from left: Le Clercq, Windham, Johnson, Williams and author Vidal, with Virginia Reed (rear).

WILD THINGS

LIFE AS WE KNOW IT

JESS BLUMBERG, T.A. FRAIL, MEGAN GAMBINO, LAURA HELMUTH AND SARAH ZIELINSKI

THINKING AHEAD

New Caledonian crows can plan ahead to solve a problem, say New Zealand researchers, who put meat behind bars and gave the birds access to a stick too short to reach the food. Six of seven birds tested used the short stick to reach a longer one, which they then used to get their treat. The crows make and use tools in the wild, but in this case they extended the idea "tools get food" to "tools get tools get food." Such complex reasoning had been seen only in primates before.

BACK FROM THE BRINK

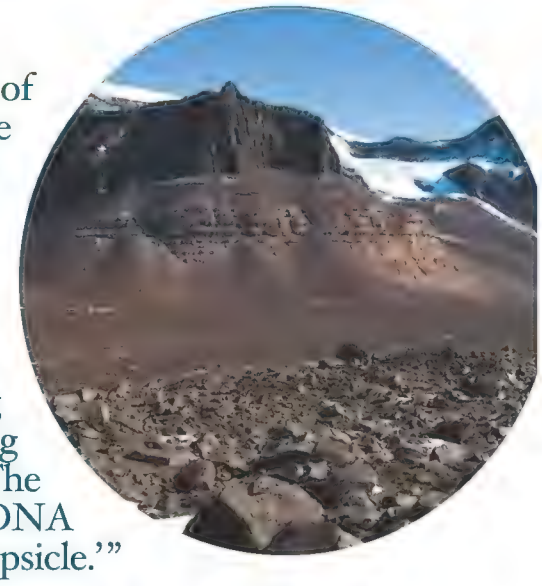
Black-footed ferrets were declared extinct in 1979, victims of disease, loss of their prairie habitat, and the poisoning and shooting of their prey, prairie dogs. A few years later, a group of 18 was found in Wyoming. Thanks to captive breeding, hundreds now live in the wild. Bonus insight: many endangered species reproduce late in life and rarely, so the populations depend on individuals reaching old age. University of Wyoming biologists report that the key to success for the ferrets, which typically live only three or four years but have large litters, is ensuring they reach their first birthday—the start of their prime breeding age.

TREES THRIVE ON FEAR

Aspen are particularly tasty to elk and have long suffered from over-browsing in Yellowstone National Park. But now aspen in some areas are making a comeback—thanks to wolves. Though eradicated from Yellowstone in the 1920s, wolves were reintroduced in 1995 and have been multiplying ever since. The result? Elk avoid riversides, where they're particularly exposed to the predator, and there's a whole new crop of young aspen in such areas, according to Oregon State University researchers, who credit the arboreal rebound to the "ecology of fear."

WHAT RAVAGES OF TIME?

Frozen microbes found in samples of eight-million-year-old Antarctic ice (right), the oldest ice on earth, are alive—*alive!*—according to a study led by Rutgers University. True, once the microbes (mostly bacteria) were thawed, they grew and reproduced more slowly than microbes extracted from younger ice. Still, the finding pushes back the age of the oldest living organisms by about 7.5 million years. The researchers say the microbial DNA encased in ice "is essentially a 'gene popsicle.'"



Observed

NAME: *Spermophilus beecheyi*, or the California ground squirrel.
OBVIOUS DEFENSIVE WEAPON: Tail waving. Ground squirrels wave their tails to appear larger to, and thus intimidate, hungry snakes.
SECRET DEFENSIVE WEAPON: Tail *heating*. When confronting rattlesnakes, ground squirrels wave their tails and transfer body heat to them, emitting infrared radiation (inset), say University of California at Davis researchers.
WHAT'S WITH THE HEAT? Because rattlesnakes can sense infrared radiation, a hot tail makes the ground squirrel look even bigger.
AND SQUIRRELS KNOW THIS? Precisely. What's more, when threatened by a gopher snake, which doesn't sense heat, ground squirrels shake but don't heat their tails. Animal communication, the researchers say, includes much more than meets the human eye.

CURRENT BIOLOGY; WENDY SHATTIL / BOB ROZINSKI; PAT O'HARA / CORBIS; DAVID MARCHANT / BOSTON UNIVERSITY; AARON RUNDUS; TC NATURE / ANIMALS ANIMALS

Go to Smithsonian.com/wildthings to see a video of crows using tools.

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World Voyage

POINTS OF INTEREST

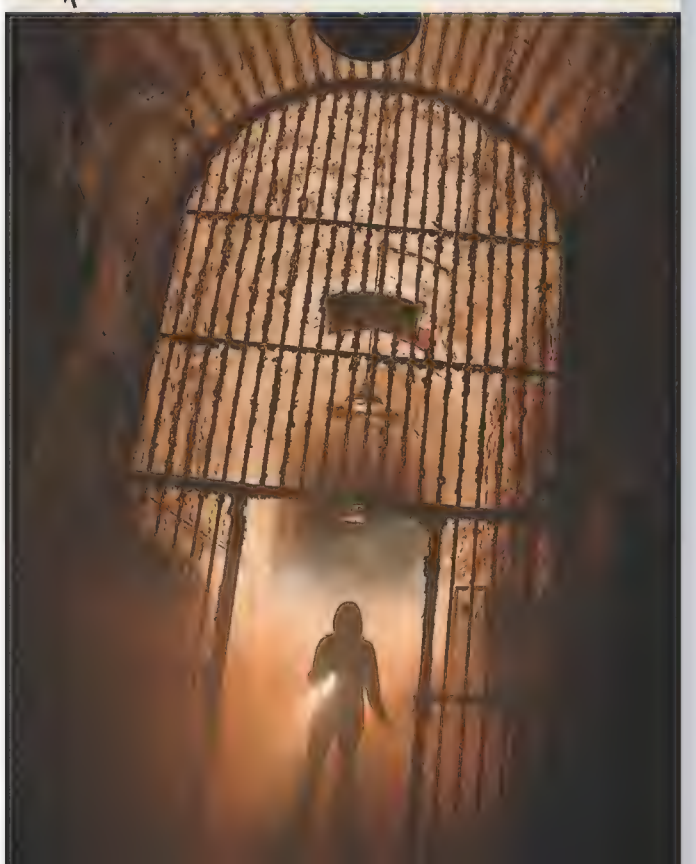
THIS MONTH'S GUIDE TO NOTABLE AMERICAN DESTINATIONS AND HAPPENINGS

Haunted Big House

PHILADELPHIA—With its 30-foot-high stone walls and crenelated towers, Philadelphia's massive, medieval-looking Eastern State Penitentiary has a foreboding air even on a sunny afternoon. But on October nights, the place can be petrifying. That's when the ten-acre complex, first opened in 1829 and now a National Historic Landmark, gets taken over by "Terror Behind the Walls," a Halloween-season attraction that features 130 actors, high-tech effects and animatronic ghouls. Thrill seekers (as many as 6,000 a night) wear special 3-D glasses on one part of the tour and carry flashlights on another. But perhaps scariest of all is simply walking through Eastern State's cellblocks, whose crumbling walls and open cell doors exude a creepy menace.

With a price tag of $780,000, Eastern State was one of the most expensive buildings of its era. It had running water and central heat, innovations even the White House lacked. Its most notorious inmate? Al Capone. Finally shut down in 1971, the prison was eventually rescued from commercial redevelopment by a citizen-led preservation effort. It opened for tours in 1988 and attracts more than 140,000 visitors each year. "People come to be scared," says Jason Ohlsen, technical director of the terror effects, then "come back for the history." {BY EILS LOTOZO}

Visit Smithsonian.com/points for prison history.



Bats Out of Hell

ROCKSPRINGS, TEXAS—As evening falls, a massive whirlwind of four million bats rises from a cactus-studded limestone ridge, emerging in a flutter of beating wings from a 361-foot-deep cave called Devil's Sinkhole. These Mexican free-tailed bats (*Tadarida brasiliensis mexicana*), about the size of hummingbirds, will cover up to 150 miles and consume half their weight in flying insects, a total of some 20 tons, before they return at dawn.

"The bats eat the equivalent of ten elephants every night," says Ben Banahan, a volunteer guide to the attraction, which is protected by the Texas Parks and Wildlife Department. "Imagine if they *didn't* do that. There would be a lot more agricultural pests."

The roost, 140 miles west of San Antonio, is the state's third-deepest cave and gets its name from an 1870s pioneer who described it as "the outlet to hell, the devil's own sinkhole." Shaped like an inverted funnel with an opening just 50 feet wide, the underground cavern is larger than a football field, about 450 feet long and 250 feet across. Formed several thousand years ago when a cavern collapsed, it holds about 200 adult bats or 500 pups per square foot.

To protect the habitat, wildlife officials limit visitors to 40 at a time. If you want to view the mammals' spectacular takeoff, hurry: the colony skips out by the end of October, winging to its winter home in Mexico. It usually returns in April. {BY MELISSA GASKILL}

Wee Trees

ASHEVILLE, NORTH CAROLINA—This fall's biggest attraction at the state's 434-acre arboretum may be the smallest: tiny trees in seasonal red and gold. Using bonsai techniques on native Appalachian trees such as hawthorn, hornbeam and red maple, horticulturists have created ▶

RUSSELL A. GRAVES; ANDREW GARN / EASTERN STATE PENITENTIARY HISTORIC SITE; COURTESY OF THE NORTH CAROLINA ARBORETUM

"I SEE real health problems in our communities. Asthma, diabetes, heart disease," says Thais. "And too many folks don't see a doctor in time. So GSK is working with community groups to offer free health screenings and connect local doctors with the people that really need help. That does my heart good, too." **To find out more visit www.gsk-healthycommunities.com**

Finding a way forward. gsk GlaxoSmithKline

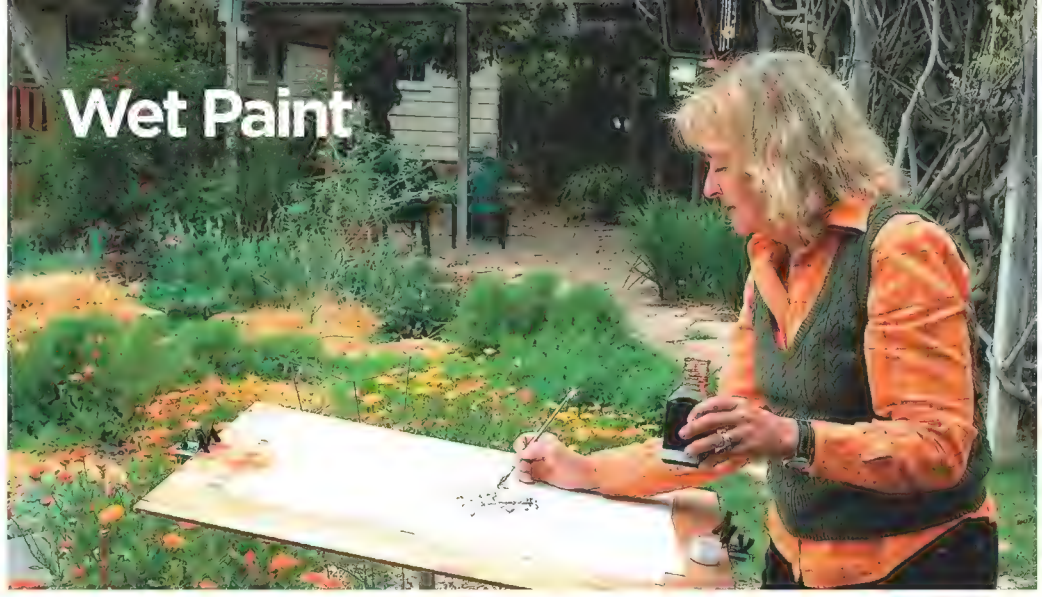
scores of Lilliputian specimens, most under two feet tall. Many will be on display at the annual juried show of bonsai creations October 13 and 14.

The North Carolina Arboretum (www.ncarboretum.org) has the nation's largest number of miniaturized American plants, including flowering shrubs, wildflowers and tropical plants. "We use plants that other people won't use," says bonsai curator Arthur Joura, who began applying the ancient art of bonsai to local flora 15 years ago. "We're opening a new view of a really old thing."

Developed in China more than 1,000 years ago, and most often applied to evergreens, bonsai strives to create harmony and serenity through painstaking cultivation. An artist typically begins by potting young plants or seedlings in shallow containers, then repeatedly pruning the roots and tops to control growth.

Joura shapes his trees using wires and splints, accentuating, say, a trunk's crookedness. The dwarfing process can take a decade, and a healthy bonsai can live a century or more. Joura's tiny bonsai blueberry bushes even bear fruit.

{ BY NAN CHASE }



Wet Paint

OJAI, CALIFORNIA—Setting aside a freshly thrown pot, ceramic artist Bruce Tomkinson turns to his visitors and begins to explain why his work is a contrast of old and new. A mile away, guests at printmaker Linda Taylor's studio find her in the garden sketching (above). Across the valley, as Theodore Gall puts the finishing touches on a wax figure, folks wander through his studio, watching him sculpt and even touching some of his works. The personal encounter is a key part of the Ojai Studio Artists Tour, an annual event launched 23 years ago to spotlight the many artists who live and work in and around Ojai, 90 miles north of Los Angeles. "What makes the tour special is meeting the artists in their studios and having them explain their inspiration," says Marie LaMarr of Encino, California. "It enhanced our experience with the artwork we purchased." Many of the artists have exhibited in galleries and museums around the world, including the Smithsonian Institution. Held this year on October 13 and 14, the self-paced tour covers about ten miles and more than 40 studios located down rustic roads or surrounded by lemon orchards or perched on hillsides—and sundry points in between.

{ BY KATE SEXTON }

Yeah, Sometimes the Traffic Can Be Really Baaad

KETCHUM, IDAHO—Every October hundreds of sheep take to the streets of this wealthy ski resort town, plodding past a golf course and multi-million-dollar houses during the Trailing of the Sheep Festival. It has been a four-month journey for the sheep, which have trekked 50 miles from their summer pastures in the mountains to Main Street on their way to winter habitats in the high desert 30 miles south. Sheep rancher Diane Peavey suggested the festival about 15 years ago when newcomers began complaining about migrating sheep blocking traffic and spoiling the bike path. Now the event is an attraction for locals and visitors alike, including California governor Arnold Schwarzenegger and actress Mariel Hemingway, both of whom own vacation homes in the area and have attended the parade of bleating livestock. Ketchum is just one mile from Sun Valley, a premier ski and vacation destination.

The festival, October 12-14 this year, also features sheepshearing and border collie sheepherding demonstrations, Navajo weaving, storytelling, sheepherder poetry, lamb dishes, Scottish bagpipers (the area's first shepherds were Scots) and Peruvian dancing (later shepherds would come from Peru, Chile, Mexico and Mongolia). There are also tours into the aspen groves to see the arborglyphs, or tree drawings (usually depicting animals, women and churches), that shepherds carved over the years. Sheep ranching's roots here go back to the late 1860s, and by World War II, there were 2.65 million sheep in Idaho—almost six times the human population. Though synthetic fibers and New Zealand and Australian lamb imports have contributed to a decline in Idaho sheep farming, it's still a livelihood for many. "Sheep trailing is not a reenactment," Peavey says. "Festival or not, we would do this."

{ BY KAREN BOSSICK }

CINDY PITOU BURTON; ALAN BERNER

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Perfect day ..... coffee/playground/nap/exercise/flea market/
Playground/bath time/dinner with grownups/
See a great movie/asleep by 9pm* .....

Most unusual gift ..... a bat skeleton .....

Recent impulse buy ..... a case of soup! .....

Retail therapy ..... pushing a cart around a big suburban "superstore"
while drinking a giant fountain soda. .....

Can't shop without ..... getting hungry .....

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MY KIND OF TOWN

LOS ANGELES, CALIFORNIA

Have Roots, Will Travel

Like the four generations of Angelenos who preceded her, the best-selling author likes to get around

BY LISA SEE

Her family's long history in L.A. is "as rare around here as snowflakes," says the author (in Chinatown in 2007; below, in 1962).

MANY PEOPLE are lured to Los Angeles because they think it has no history and they can escape their pasts and reinvent themselves. That's not me. My great-great-grandmother—a single mother with an entrepreneurial spirit—came here from Washington State to start her own business. My great-grandfather came from a small village in China and became the patriarch of Los Angeles' Chinatown. This makes me a fifth-generation Angeleno, and I'm pretty confident you won't meet many people like me. (In the interest of full disclosure, I was born in Paris, where my parents were students, but I don't count that six-week aberration.) My sons are sixth-generation Angelenos—as rare around here as snowflakes.

As a girl, I spent a lot of time with my grandparents and other relatives in our family's antiques store in Chinatown. My grandparents used to take me to a restaurant we called "the little place" to have what was then called *cha nau* (and is now more popularly known as dim sum). Later we'd go shopping along Spring Street: to the International Grocery for preserved turnip, fermented tofu and sesame-seed candies; to the Sam Sing Butcher Shop, with its life-size gold-leafed pig in the window; and to the Lime House for Chinese custard pie.

But visiting my grandparents was about much more than things Chinese. One block south of my family's store was El Pueblo, the city's birthplace and home to Olvera Street—a tourist destination in the guise of an "authentic" Mexican marketplace. Since 1781, El Pueblo has been a place where art, culture, politics and rabble-rousers of every stripe have congregated. But what most people don't know is that in addi-

GILLES MINGASSON / GETTY IMAGES; LISA SEE COLLECTION

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tion to the original Yagna Indian, Spanish and Mexican settlements, Los Angeles' first Chinatown stood here; not only did the whole city ripple out from El Pueblo, but my family did as well. My great-grandparents had a store here, and my grandfather's restaurant, facing the original "Spanish plaza," was only the seventh family-style Chinese restaurant in the city. I used to think my grandmother liked to take me to El Pueblo for "Spanish" food—the "polite" name for Mexican food in those days—but now I understand that she liked to go there to remember her past.

Sometimes we'd continue on to Little Tokyo, where my grandmother would buy interesting fabrics or pretty stationery. Other times we'd leave the family store and head a couple of blocks north along Broadway and then cut over to Hill Street to visit someone at the French Hospital, one of only two vestiges of what had once been a vibrant Frenchtown. (Philippe's restaurant, self-described home of the original French-dip sandwich, was just across the street from my family's store.) Much of the property along Broadway—today the main drag of Chinatown—is still owned by Italian families; that area used to be Little Italy. Today, the descendants of those pioneer families rent to immigrants from Vietnam, Cambodia, Laos and China. I sometimes wonder if this single square mile or so has more layers of people, cultures and food than any other in the country.

The author's great-grandparents owned several antiques stores (her great-uncles visiting, c. 1905).

LISA SEE COLLECTION

It seems that once my relatives got here, they just had to see, do, eat and play their ways across the city . . . in good times and bad. My Chinese great-grandfather loved cars and bought a new one every year, although he never learned to drive. (His sons drove him around, and he let others borrow his car to advertise their businesses.) My great-grandmother Jessie and her husband, Harvey, were itinerant workers who followed harvests and whatever other work they could get from Alaska down to the Mexican border. Jessie's diary, written from 1905 to 1937, describes how, once she moved to Los Angeles, she loved to get behind the wheel of some beat-up jalopy or other and drive hither, thither and yon to find bootleggers, go dancing or bail Harvey out of jail. (He ended up "on the nickel," living and dying homeless on Fifth Street.) All this driving—crisscrossing the city—took a long time back then, between breakdowns, dirt roads, flat tires, scarce gas stations and run-ins with the law. But this didn't stop them, nor did it stop my mother's parents after one came from Texas, the other from New York State. So I guess my desire to explore the city is genetic.

By the time I came along, in 1955, my parents lived on a "walk street"—a street reserved for pedestrians—off Hyperion Avenue between the enclaves of Silver Lake and Echo Park. Once when I was a toddler, I sped out the screen door, zipped down the walk street, made a left at Hyperion and ambled along the sidewalk until a policeman spotted me. He took me back to my mom, who was horrified and embarrassed, but to this day she remains amused and bewildered by the fact that my nature was evident at such a young age.

I still feel the need to see what's out there. Like my parents, grandparents and great-grandparents before me, I love to get in my car, roll down the windows, turn up the radio and drive. (By now you must be thinking: No wonder Los Angeles has so much traffic! No wonder it has so much smog! What about global warming? And you'd have a point, although in my defense, I drive a Prius and explore a lot on foot too.)

My first memories are of a truly decrepit downtown tenement; now I live in lush, celebrity-studded Brentwood. In all, I've lived in more than ten different parts of the city. Along the way, I've endured fires, floods, earthquakes and land-

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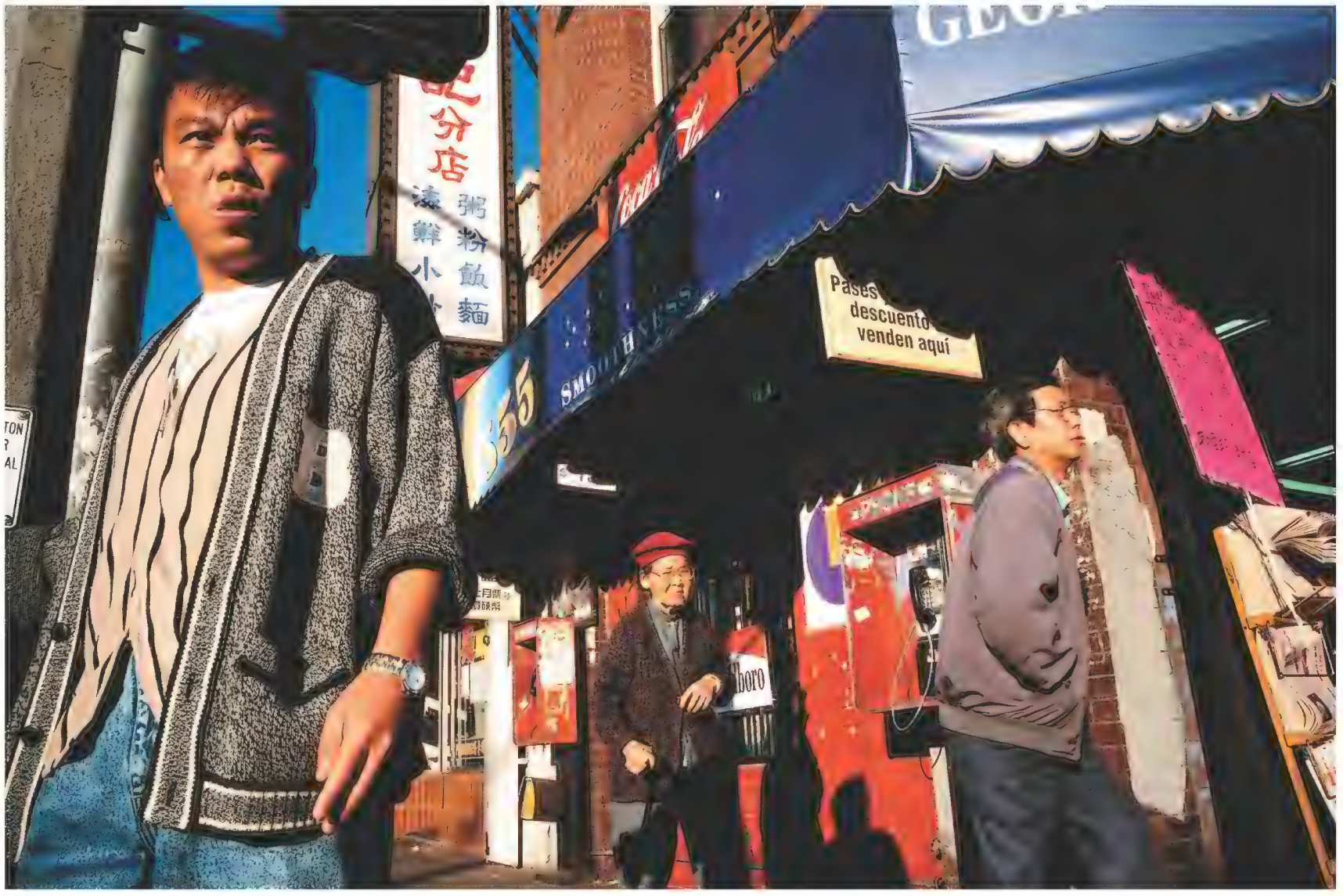

Chinatown's signs testify to L.A.'s heterogeneity. "Here's the thing," the author writes, "all this diversity comes at a price."

slides. I've met surfers and hippies, seen a neighborhood turn into a ghetto and encountered deer, coyotes, opossums, raccoons, every kind of rat and a mountain lion. I've crossed the city in search of the best Korean *bibimbap*, Salvadoran *pupusas* and Ethiopian food I eat with my fingers. I'm old enough to remember the Watts riot, and my sons remember what happened after the Rodney King verdict.

Here's the thing: all this diversity comes at a price, and it hasn't always been a black-and-white, rich-and-poor or north-and-south-of-the-border issue. Los Angeles' first race riot occurred in Chinatown in 1871, when 19 Chinese men and boys were stabbed, hanged or shot to death. In 1945, on the day my aunt Sissee got married, my great-great-uncle was driving to church on the recently completed freeway. The kids got rowdy in the back seat, and one of my cousins (so many times removed) fell out of the car. It was fortunate he only broke his arm—the French Hospital wouldn't treat him because he was Chinese. In 1957, when my great-grandfather died, the City Council honored him as a Los Angeles pioneer, but one cemetery refused to bury him because he was Chinese. My parents were only the second mixed-race couple in my family to marry legally in this country; California law banned marriage between Chinese and Caucasians until 1948. And that's just one family's story. I like to think we can learn from the past, but as the film *Crash* illustrated, we're constantly bumping into each other, and on any given day anything can happen in the City of Angels.

I'm a city commissioner now and serve on the El Pueblo de Los Angeles Historical Monument Authority, which twice a month brings me back to my family's and my city's roots. Lately, after commission meetings, I've been walking to the block where my family had their store when I was growing up. Philippe's is still in business, and the double-dipped pork sandwich there is still the best. But these days I feel compelled to wend my way around the world by circling that single block, where I have the choice of takeout from Mexican, Filipino, Peruvian, Thai, Chinese or Texas barbecue restaurants. Then I get in my car and head home.

Sometimes I take the freeway, but often I head west on Sunset Boulevard to travel through time, passing old neighborhoods with houses clinging to hillsides and bungalows swathed in Cecile Brunner roses, and then threading through the run-down decadence of Hollywood, with its prostitutes and by-the-hour motels, the fading hipness of the Sunset Strip and Beverly Hills, with its mansions and broad green lawns. Often, I don't see Los Angeles as it is—so much of it new, so much of it still trying to define itself—but as it was. I see the city of my childhood, the lingering echoes of my family and a history that's deep, complex and not always wonderful. It's a city beautiful, melancholy and triumphant, and it's my home.

LISA SEE *is the author of many books, including the novel* Peony in Love *and a family history,* On Gold Mountain.

DAVID BUTOW / CORBIS SABA

INTERVIEW

FRED SPOOR

PALEONTOLOGIST, LONDON

The evolution scholar talks about a landmark new study challenging the classic view of human ancestry **BY SARAH ZIELINSKI**

Anthropologists have said human beings evolved in a straight line from *Homo habilis* to *Homo erectus* to us, *Homo sapiens*, over two million years. But fossil bones found in 2000 near Lake Turkana in Kenya are changing that view, says University College London's Fred Spoor, a lead author of the study.

HOW CAN A SINGLE BONE, SUCH AS A *HOMO HABILIS* UPPER JAW, HELP RECONSTRUCT THE PATH TO *HOMO SAPIENS*? In the past, we didn't know how long *Homo habilis* had survived. After we found this upper jaw, we were surprised when the geologists told us that it was only 1.44 million years old. Both *Homo erectus* and *Homo habilis* are seen in the fossil record beginning at about 1.9 million years ago. Instead of one evolving into the other, they overlap for about 450,000 years, an enormously long period. They must have survived side by side in the same geographical area for a long time and somehow found different ecological niches so they would not directly compete—maybe by focusing on a different diet or habitat, like chimpanzees and gorillas today.

WHAT DOES THAT OVERLAP MEAN FOR THE LINEAR VIEW OF HUMAN EVOLUTION? It means *Homo erectus* and *Homo habilis* are really sister species, with a common ancestor older than 2 million years.

NOW THAT YOU ARE BACK OUT IN THE FIELD IN KENYA, WHAT ARE YOU HOPING TO FIND? We are working in areas between about 1.6 and 2 million years in age. Ideally we would like to work between 2 and 3 million years, when that hypothetical common ancestor of *Homo habilis* and *Homo erectus* lived. But the parts around Lake Turkana that have sediments from that period really don't show much bone. That is a general problem in eastern Africa. We know very little about this particular earlier time period.

YOUR GROUP ALSO FOUND A *HOMO ERECTUS* SKULL. WHAT'S SPECIAL ABOUT THAT? It is a young adult, a very small one. This shows that there is size variation in *Homo erectus*. If you look at modern primates with sexual dimorphism [the males are much larger than the females], groups are often organized around a single dominant male, a silverback in the case of gorillas. Possibly *Homo erectus* is less modern human-like in its behavior than we thought.

NOT THE CLASSIC PICTURE OF HUMAN EVOLUTION, IS IT? No. This research shows we evolved in the same way other mammals did—in an experimental, unpredictable, quirky way, with side branches that die out after a long time, and then something else comes along. That differs from the human-centric way of thinking in the classic cartoon of a chimpanzee evolving into a person, as if there was a directing hand steering chimpanzee-looking creatures to modern humans.

AUBREY WADE

THIS MONTH IN HISTORY

OCTOBER ANNIVERSARIES
MOMENTOUS OR MERELY MEMORABLE

BY ALISON McLEAN

"All the News That's Fit to Print"

The New York Times.

LATE CITY EDITION

VOL. CVII..No. 36,414. NEW YORK, SATURDAY, OCTOBER 5, 1957. FIVE CENTS

SOVIET FIRES EARTH SATELLITE INTO SPACE; IT IS CIRCLING THE GLOBE AT 18,000 M. P. H.; SPHERE TRACKED IN 4 CROSSINGS OVER U. S.

HOFFA IS ELECTED TEAMSTERS' HEAD; WARNS OF BATTLE

Defeats Two Foes 3 to 1 —Says Union Will Fight 'With Every Ounce'

IN TOKEN OF VICTORY: Dave Beck, retiring head of the Teamsters Union, raised hand of James R. Hoffa upon his election as union's president. At right is Mrs. Hoffa.

FAUBUS COMPARES HIS STAND TO LEE'S

Says He Will Remain Loyal To People of Arkansas— All Is Quiet at School

Flu Widens in City; 10% Rate Predicted; 200,000 Pupils Out

ARGENTINA TAKES EMERGENCY STEPS

State of Siege Proclaimed in Buenos Aires Region —Arrests Reported

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SATELLITE SIGNAL BROADCAST HERE

425 YEARS AGO HOW TIME FLIES

Ten days are eliminated when a new calendar goes into effect in Spain, Portugal and Italy in October 1582. Designed by Aloysius Lilius and mandated by Pope Gregory XIII to restore the vernal equinox—and thus Easter—to a date chosen centuries earlier, the new Gregorian calendar—as it becomes known—replaces the Julian calendar. By the time England and its colonies go Gregorian, in 1752, another day must be consigned to history's dustbin.

220 YEARS AGO FEDERAL CASE

Alexander Hamilton publishes the first of the Federalist Papers, 85 articles championing a central representative government, in New York's *Independent Journal*, October 27, 1787. Arguing that "vigor of government is essential to the security of liberty," he—with later authors James Madison and John Jay—urges ratification of the Constitution to replace the weaker, state-based Articles of Confederation. It is ratified in 1788.

310 YEARS AGO DOWN TO THE SEA IN SHIPS

The three-masted frigate USS *Constitution*—one of six ships commissioned in 1794 to found the U.S. fleet—is launched from the Boston shipyard of Edmund Hartt on October 21, 1797. Dubbed "Old Ironsides," after a British shot bounces off its wooden hull in the War of 1812, the oldest commissioned warship afloat is now used to teach naval history to the public.

60 YEARS AGO BOOM, NOT BUST

Flying an experimental rocket-powered plane at 43,000 feet over California's Mojave Desert on October 14, 1947, Air Force captain Chuck Yeager, 25, shatters the sound barrier for the first time, dispelling fears that compression forces at such speed would destroy the plane. "Smooth as a baby's bottom," Yeager later calls the 700-mph flight in the Bell XS-1 he named "Glamorous Glennis" for his wife. The supersonic feat is kept hush-hush until December. Yeager is awarded the Presidential Medal of Freedom in 1985.

130 YEARS AGO WEARY WARRIOR

After three months of battling the U.S. 7th cavalry—which is charged with moving his people to a distant reservation or killing them—and a 1,700-mile trek toward Canada, Nez Perce chief Joseph surrenders, October 5, 1877. "From where the sun now stands I shall fight no more forever," he is said to have proclaimed; his people are shipped to Kansas, far from their Oregon home. In 1879, Joseph goes to Washington, D.C. to plead the Nez Perce case, without success. He dies in 1894.

Visit Smithsonian.com/history for "Today in History."

CLOCKWISE FROM TOP RIGHT: GRANGER COLLECTION, NEW YORK; JOHN TRUMBULL, 1806 / GIFT OF HENRY CABOT LODGE, NATIONAL PORTRAIT GALLERY, SI; GRANGER COLLECTION, NEW YORK; EDWARD S. CURTIS COLLECTION / LIBRARY OF CONGRESS; WILF HARDY / BRIDGEMAN ART LIBRARY; ROGER-VIOLLET / IMAGE WORKS

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Around the Mall

SCENES AND SIGHTINGS FROM THE SMITHSONIAN MUSEUMS AND BEYOND

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The Object at Hand p. 40
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Tuareg Motif p. 42
What's Up p. 44

"This egg is recording data," says Zoo biologist Sara Hallager. "The amount coming in is mind-blowing."

JAY L. CLENDENIN / AURORA SELECT

HATCHING A NEW IDEA

PAGE 38

FROM THE CASTLE

Health Checks

BY CRISTIÁN SAMPER

COULD WE INVENT a global stethoscope to check our planet's health? The Smithsonian Tropical Research Institute (STRI) will use rain forests to do just that—measuring changes in the amounts of carbon dioxide (CO_2) inhaled by three million trees in 20 study plots in 15 countries worldwide—thanks to an $8 million grant from HSBC Holdings and a commitment of more than $10 million from the Frank Levinson Family Foundation.

When trees absorb CO_2, they remove it from the atmosphere, thereby reducing the amount of gas in the air and its role in global warming. Over the next five years, the Smithsonian's Global Earth Observatories Program will measure this absorption. Can forests reduce global warming while restoring degraded lands? What are the differences between native and plantation forests in promoting biodiversity and ensuring fresh, clear water?

A full array of Smithsonian scientists and collaborators will investigate the effects of climate change on forest animals, plants and microbes. Peering into the distant past through paleontological and genetic analysis, they will measure biodiversity through time. Specialists at the Smithsonian's Astrophysical Observatory and the National Air and Space Museum will monitor forest health from space.

The Global Earth Observatories Program monitors climate change by measuring tropical forests (in Panama) worldwide.

This far-reaching project dates back to 1979 when Smithsonian ecologists began to map and measure every tree with a diameter wider than a pencil in 120 acres of a forest on Barro Colorado Island, STRI's biological reserve in Panama. That study plot—today the most intensely studied rain forest on earth—had more than a quarter-million trees, representing 300 species. Five years later, the scientists counted the trees again and documented remarkable and unexpected forest dynamics. Roughly 40 percent of the tree species had decreased in number by more than 10 percent, apparently as a result of droughts that multiplied death rates by up to 20 times that of non-drought years. The finding has led to a new theory of biodiversity and galvanized a spirited debate on the role forests along the Panama Canal play in regulating its water.

By 1990 scientists around the globe had replicated the STRI methods, and a network of study plots emerged, operated in each country by one or more partner institutions, for example the Indian Institute of Science. The resulting Smithsonian Institution Global Earth Observatories Program now involves hundreds of scientists from more than two dozen institutions. As Dr. Levinson puts it: "Clear, long-term information-gathering about the dynamics of the tropical forest is essential if we are to build ecological, climate or biodiversity models that have predictive power."

CRISTIÁN SAMPER *is Acting Secretary of the Smithsonian Institution.*

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IFS-A135208 Ed. 7/2007

Nested Interest

Electronic eggs hatch new insights into breeding exotic birds at the National Zoo

"Usually after the breeding season," says Hallager (swapping eggs this summer), "my whole arm is bruised pretty bad."

IN EARLY JUNE, the squabbling on Breeding Island begins in earnest as those strutting high-strung stars of the tropics, the Caribbean flamingos, lay fist-size eggs. On many mornings, National Zoo biologist Sara Hallager walks out to the island, a muddy mix of dirt and peat moss surrounded by a ring of water, to dupe the birds in the name of science.

She slips off her shoes for better traction, slaps on a pair of rubber gloves and inches toward the mini-moat as the birds raucously express their alarm. "I've never been bitten on the face, but it's not for their lack of trying," Hallager says. Some birds cooperate and stand right up. She has to lift others bodily. Then she pulls the switcheroo.

It has long been standard practice for Zoo biologists tending captive bird colonies to substitute fake eggs for real ones, which are then placed in an incubator for safekeeping until they're ready to hatch. But nowadays some of the dummy eggs aren't so dumb. They are, in fact, sophisticated electronic devices that monitor such variables as temperature and rotation and send the data to a computer. The Zoo's four eggs, at $6,500 apiece, are designed to answer a basic question: What exactly goes on under a roosting bird? "Right now we're doing a lot of guesswork," says Hallager, who specializes in flamingos and kori bustards, large birds native to the African savanna. "But this data will help us mimic natural incubation as closely as possible."

In one recent test, the researchers found that a kori bustard frequently turned its egg and moved on and off it throughout the night, with temperatures under the bird fluctuating by as much as 20 degrees. Such findings may lead Zoo staffers to turn incubated eggs more often and vary the temperature. The Zoo has had success hatching kori bustards—it's one of the few facilities in the world to breed the birds—but there's always room to improve, Hallager says: "By learning how Mom's doing it, we can pretty much nail it down."

The telemetric egg was originally developed in 1998 by Advanced Telemetry Systems, a Minnesota-based company, to help the St. Louis Zoo thwart wild raccoons that were stealing waterfowl eggs. Zoo biologists were eager to get the real eggs into incubators as soon as possible, and the telemetric eggs helped them decide how best to care for the eggs once they did. Another facility using the device is the Calgary Zoo in Alberta, Canada, which is hoping to boost its success breeding whooping cranes. Researchers there have found that the nests of roosting cranes are both cooler and drier than they'd thought, and they've purchased new incubators that more closely mimic those conditions.

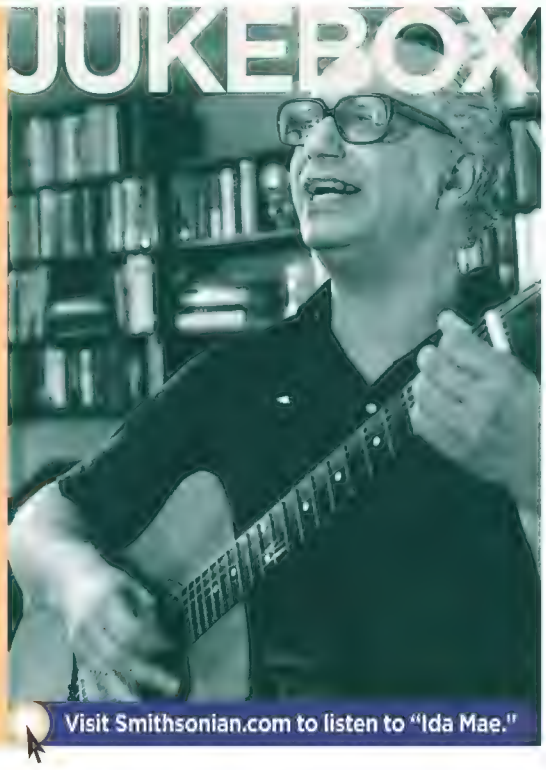
National Zoo biologists hope that such findings, combined with their own telemetric egg data, will yield a greater understanding of bird reproduction. The Zoo says there's a critical need to add to the 65 kori bustards in U.S. facililties, including the eight at the Zoo. The birds are declining in number in their native habitat even as biologists are increasingly wary of taking birds from the wild to sustain captive populations. "What we have in this country is all we have, so the more we learn how to breed them, the better," Hallager says.

As for the roosting Caribbean flamingos, they typically spend only about 25 days atop a dummy egg before Hallager returns to Breeding Island to make another swap. This time as she approaches, the birds are even more riled to see her. She goes to a nest, grabs a dummy egg and delicately replaces it with one that's on the verge of hatching. Mom knows it's the real thing when she hears peeping.

{ BY JESS BLUMBERG }

ODE TO A FEDERAL ENTITLEMENT

The first recipient of Social Security benefits, Ida Mae Fuller, may not seem a promising subject for a song. But Joe Glazer (1918-2006), known as "Labor's Troubadour" (right), sang "in the footsteps of Ida Mae, millions get their checks today" on a 1954 album. Hear it on "If You Ain't Got the Do-Re-Mi," songs about money from Smithsonian Folkways compiled to mark the opening on Wall Street of the Smithsonian-affiliated Museum of American Finance. { BY JESS BLUMBERG }



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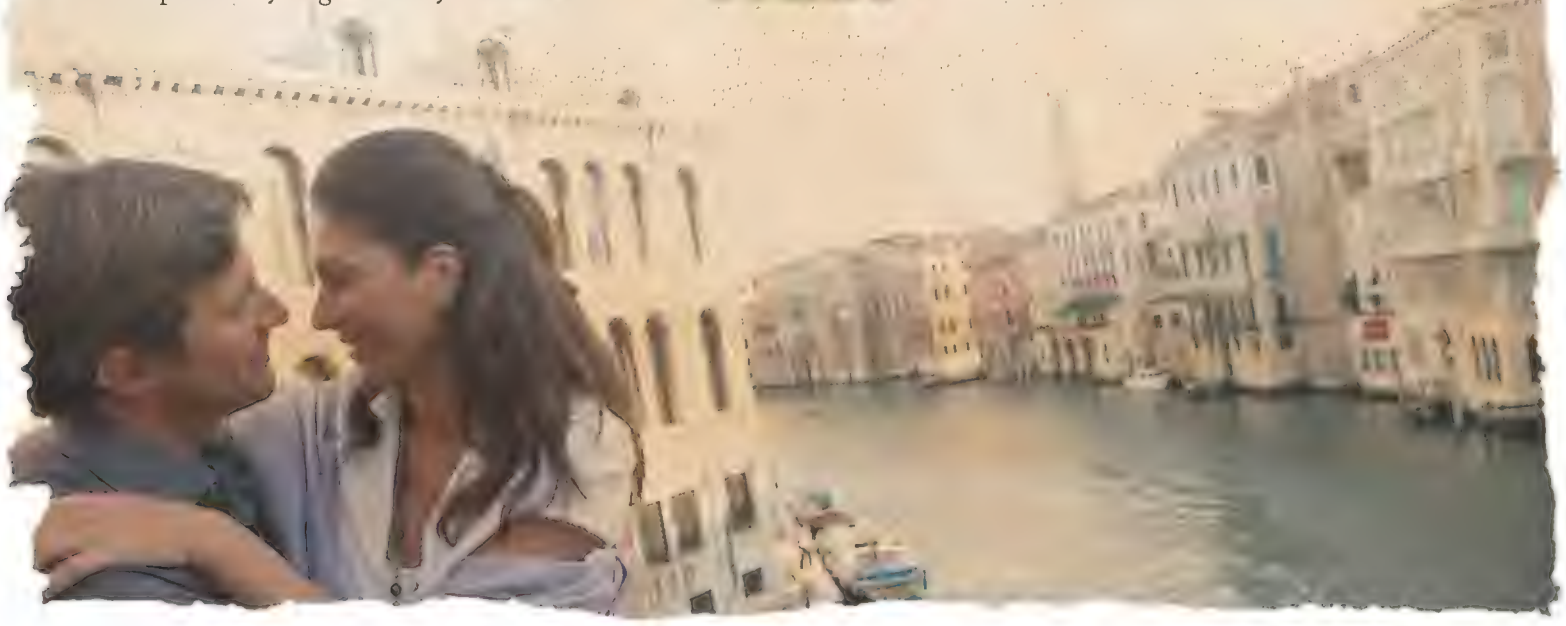

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THE OBJECT AT HAND

Musical Washboard

NATIONAL MUSEUM OF AMERICAN HISTORY

ART AND SOUL

Bluesman Robert Young wasn't just fooling around

BY OWEN EDWARDS

TO BE SURE, it constitutes a conversation piece. The Rube Goldberg-esque curiosity within the musical-instruments collections at the Smithsonian's National Museum of American History (NMAH) consists of two old-fashioned washboards bolted together and decked out with frying pans, a hubcap, pot lids, a wood block, a cowbell, tin plates and an old car horn with a rubber bulb. This manic, timpanic gizmo, dubbed a "full-dress" washboard by its musician creator, was the brainchild of a Philadelphia bluesman, Robert Young—a.k.a. Washboard Slim.

The washboard instrument, of course, long predates Young, who was born in 1900 and died just a few days short of his 90th birthday, not long after his final gig. It is a venerable component of American roots music, with variations that include the *frattoir*, a corrugated-metal breastplate often worn and played by members of New Orleans zydeco bands.

Young's innovation was to attach a board to the instrument's base, creating a kind of narrow platform. He balanced that extension on a chair and sat on it, gripping the washboard, attached at the other end of the board, between his knees. This ingenious arrangement kept both hands free, enabling Young to produce a remarkable variety of percussive sounds, the result of using everything from door hinges to thimbles as his inspired, idiosyncratic drumsticks. "Young didn't put anything on that washboard without a purpose," says Gary Sturm, the curator of musical instruments. "He was making a selection of shapes and sizes for a variety of sounds, and the selection wasn't as random as it may seem. When he added a cowbell, it had to be just the right cowbell."

Although Young's nickname may sound like the title of a new diet book and his instrument may resemble outsider art, he was an accomplished musician who played with some of the best bluesmen in the business. His colleagues included such luminaries as Brownie McGhee (with whom he recorded "Double Trouble" and "Money Spending Woman"), Big Bill Broonzy, Sonny Terry and Buddy Moss. Born in Marshall, Texas, Young moved to Philadelphia in the early 1940s, after living in the Carolinas and Virginia. In his later years, he regularly appeared at Philadelphia Mardi Gras celebrations with a local band, the Wild Bohemians. "Robert was a real gentleman," recalls Bohemian guitarist Ted Estersohn, who performed with Washboard Slim for a decade. "He had played guitar and trombone as a younger man, but at some point he'd had a stroke, which kept him from those instruments for a while, so he put together his washboard and played that for the rest of his life.

Young sat on a board that he'd attached, freeing up his hands. He "didn't put anything on that washboard without a purpose," says curator Gary Sturm.

BOB SAPOVITS

BBC VIDEO

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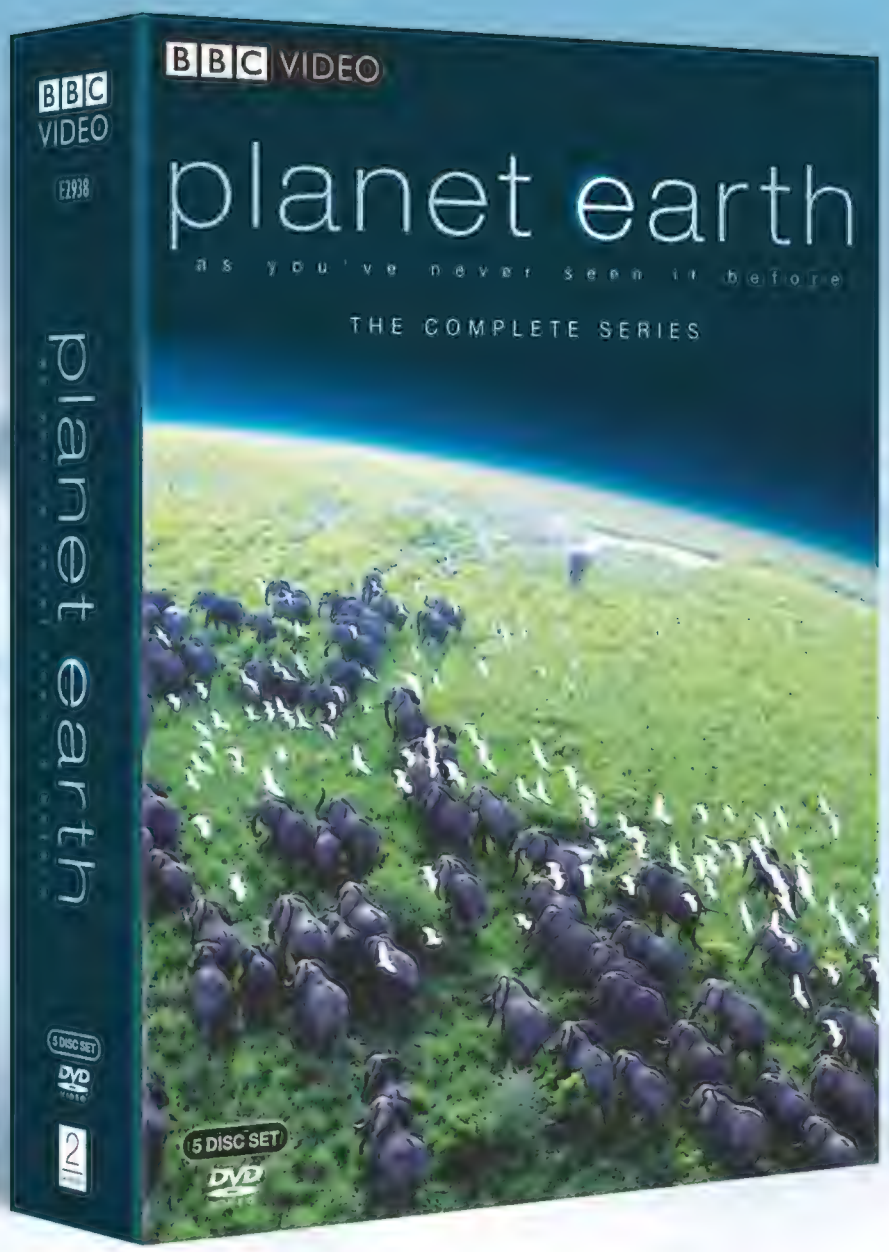

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But he could be surprising. At his 85th birthday party, he picked up a guitar and played just fine."

According to Estersohn, sometime in the mid-1980s Young bought more sophisticated percussion instruments, including a high-hat (two cymbals operated by a single foot pedal). "But his new gear was all stolen from the trunk of his car," Estersohn says, "so he went back to his original washboard. It was given to me after he died. The Smithsonian always seemed like the place the washboard should go."

Young, says Estersohn, died of "old age and poverty." But he was not unmourned, or unrecognized. What had been planned as a birthday bash

"Robert [c. 1986] was a real gentleman," recalls blues guitarist Ted Estersohn.

became a memorial concert, with money raised there donated to his wife, Anna Johnson. Wilson Goode, Philadelphia's mayor at the time, declared the day of the concert, June 5, 1990, to be Washboard Slim Day.

The NMAH is closed for renovation; when it reopens next summer, Sturm plans to assemble what he calls "a wall of amazing artifacts," of which the washboard would eventually be one. That would suit Estersohn just fine. "One of the main reasons I wanted the washboard to be at the Smithsonian," he says, "is so that a kid could see it and say, 'I could do that.' "

OWEN EDWARDS *is a freelance writer and author of the book* Elegant Solutions.

Q&A

The Smithsonian Latino Center recently honored **CHEECH MARIN** with a Legacy Award for his commitment to Chicano artists. He spoke with former magazine intern David Zax.

PEOPLE THINK OF YOU PREDOMINANTLY AS AN ACTOR, BUT YOU'VE DONE A LOT OF OTHER THINGS. Yeah, I was the product of a catholic education in both religious and secular terms. I was interested in a lot of subjects from very early on. And that's uniquely Chicano, because every Chicano I knew always had three jobs.

WHEN DID YOU FIRST TAKE AN INTEREST IN CHICANO ART? As a kid, I used to go to the library and take out all the art books. By the time I discovered Chicano painters in the mid-'80s, I recognized that these guys were really world-class painters, but they weren't getting any attention.

WAS THERE A MOMENT AS AN ART VIEWER WHEN YOU WERE REALLY MOVED? Every time I saw a new painting I liked, it just knocked me out, I was, like, "Wow." Seeing the painters come along to produce a masterpiece, and the works leading up to it, what they were perfecting, and their vision and their ability to convey those ideas—it was like discovering King Tut's tomb.

WERE ARTISTS SURPRISED THAT HALF OF THE CHEECH AND CHONG COMEDY DUO WAS AN ART COLLECTOR? No, they were very happy because—"Hey, there's an art collector with money!"

IS THERE AN AFFINITY BETWEEN THE ART YOU'VE SEEN AND YOUR EXPERIENCE AS A CHICANO PERFORMER AND ARTIST? Absolutely, there was a reverence and an irreverence simultaneously—that really characterizes Chicano. It is sophisticated and naive simultaneously, sometimes in the same symbols that they use. It's multilayered. And that's exactly the way I work: there's the obvious layer, a sublayer and a much deeper layer. It's a combination of high and low art at all times.

WERE YOU A CLASS CLOWN? I was a teacher's worst nightmare: a class clown who got straight A's.

Visit Smithsonian.com/mall to read more of our Cheech Marin interview.

Tuareg Chic

What's the link between European high fashion and the Tuareg, a semi-nomadic Berber group from Saharan Africa? A new exhibition at the National Museum of African Art highlights the story. In 1998, French entrepreneur Jean-Yves Brizot formed a Tuareg silver guild in Agadez, Niger. The jewelry caught the eye of Pierre-Alexis Dumas, artistic director of Hermès, the Parisian design house. *Voilà*!

Tuareg clasps and necklaces began appearing as motifs in Hermès silk scarves (above, a Tuareg pendant and, left, a scarf detail). "Tuareg art has a graphic appeal that would be attractive to high-end fashion designers," says the museum's Christine Kreamer. And exhibition co-organizer Tom Seligman of Stanford's Cantor Center for Visual Arts says the scarves, in turn, have raised awareness of Tuareg designs. { BY JESS BLUMBERG }

ANDREW ORTH / RETNA; TED ESTERSOHN COLLECTION; CANTOR ARTS CENTER, STANFORD UNIVERSITY (2)

For an insider's look at the Smithsonian, visit Smithsonian.com/mallblog.

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What's Up

SQUARED AWAY Pioneers traveling west along the Great Platte River Road through the Nebraska Territory in the 19th century packed only necessities, which, to them, included quilts. More than 50 quilts from the era, loaned by Nebraska museums, are at the Renwick Gallery through January 21.

FESTIVITIES

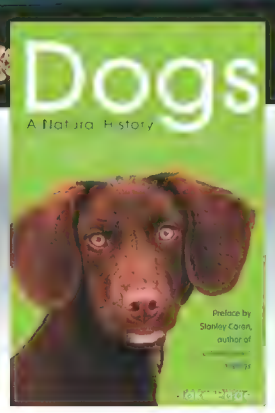
For the Nahuas of northeastern Mexico, carnival (left, 1993) marks the shift from the dry to the rainy season. Through February 15, the Natural History Museum shows 150 photographs of indigenous Mexican festivals by Texas-based George O. Jackson de Llano.

NATIVE TALES

The Nuxalk of British Columbia use masks (a raven) to tell ancestral stories during potlatches. Objects from 11 Pacific Northwest societies are at the American Indian Museum's Heye Center in New York City to May 18.

SITTING PRETTY

Best known for his etchings of Rome, Giovanni Battista Piranesi (1720-78) also created interiors and influenced furniture designers, such as Thomas Hope (his 1802 settee). At New York City's Cooper-Hewitt through January 20: more than 100 pieces by Piranesi and those he inspired.



IF ONLY DOGS COULD READ

When were dogs first domesticated? About 135,000 years ago, far earlier than once thought. Do dogs see in color? Yes, but not as much as we do. Does a dog recognize itself in a mirror? Not really. Why not? Paw through *Dogs: A Natural History* by Jake Page, new from Smithsonian Books.

{ BY JESS BLUMBERG }

VISIT THE SMITHSONIAN For a free Associates' planning packet, call 202 633-1000 or 202 633-5285 (TTY), 9 a.m. to 5 p.m. Monday through Friday and 9 a.m. to 4 p.m. Saturday. Or send an e-mail to info@si.edu. The Smithsonian Information Center in the Castle is open daily, 8:30 a.m. to 5:30 p.m. Members can visit the reception desk between 9 a.m. and 4 p.m. to register for a behind-the-scenes tour and to hear about membership benefits. Most museums are open daily, 10 a.m. to 5:30 p.m. All museums are closed December 25.

SMITHSONIAN AMERICAN ART MUSEUM (3); GEORGE O. JACKSON DE LLANO; WALTER LARRIMORE / NMAI; SI; POWERHOUSE MUSEUM, SYDNEY; SI BOOKS

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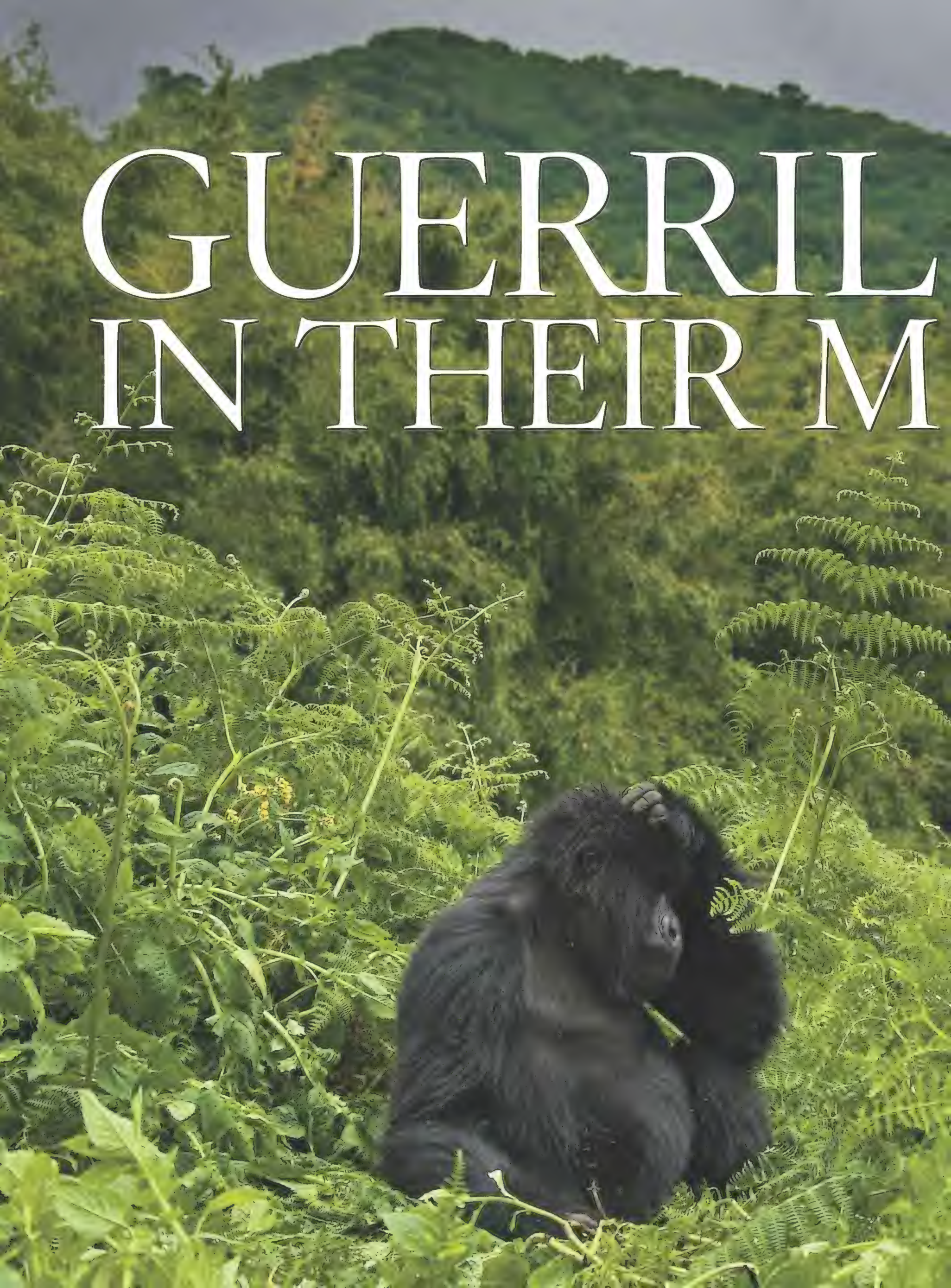
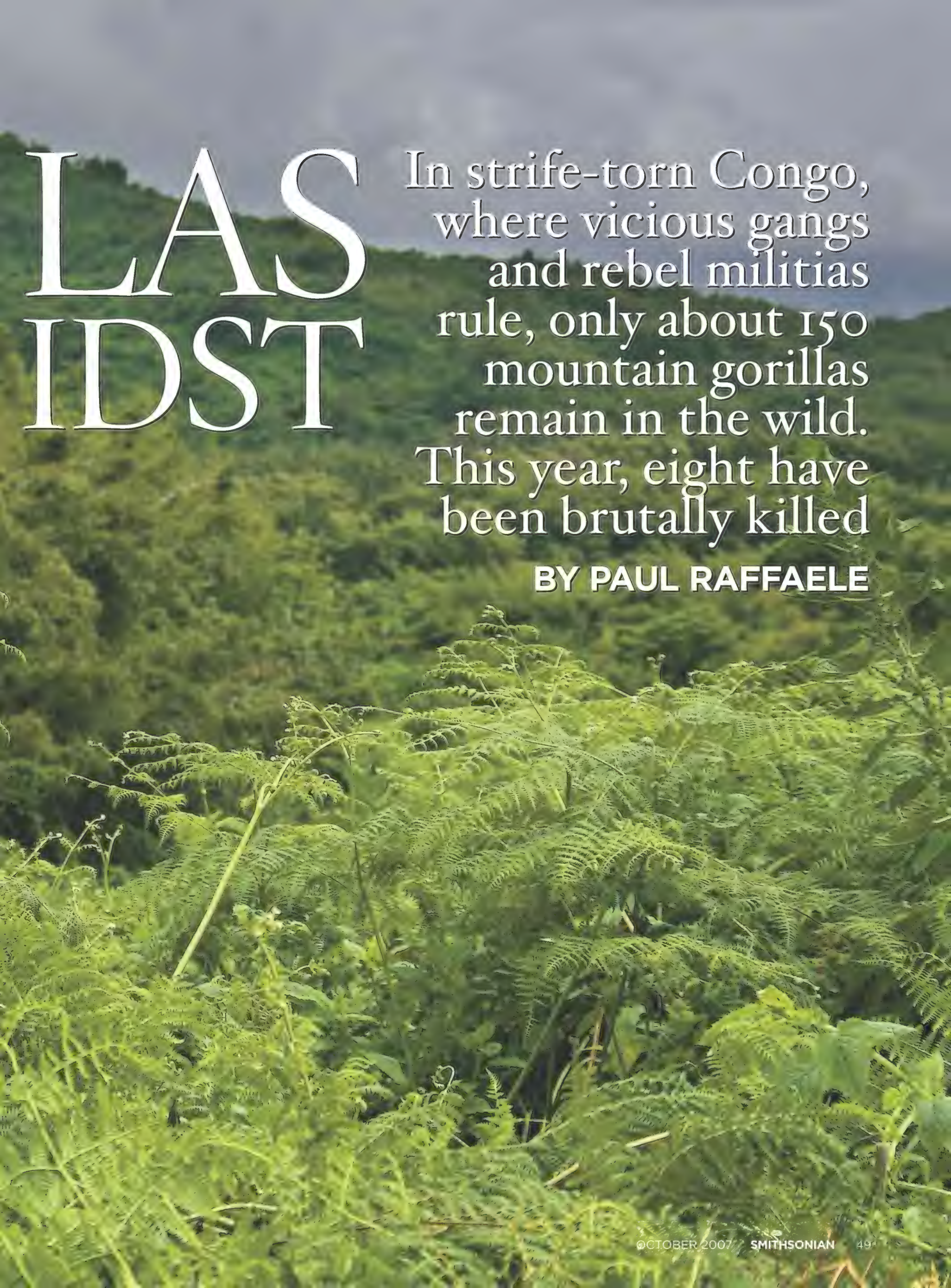


LAST IDST

In strife-torn Congo, where vicious gangs and rebel militias rule, only about 150 mountain gorillas remain in the wild. This year, eight have been brutally killed

BY PAUL RAFFAELE



The path to the mountain gorillas is not for the fainthearted. For nearly two hours here in Congo, I have climbed almost vertically up a rocky trail through dense jungle, ever wary of running into the anti-government rebel militias that swarm through these mountains. Leading the way are two trackers and three armed rangers who, charged with ensuring the safety of the four gorilla families that live on these slopes, make this journey routinely.

At some 10,000 feet above sea level, on the slopes of Mount Mikeno, a dormant volcano in the Virunga Mountains, the trackers pick up signs of a gorilla clan led by a silverback—so-called for the distinctive silver saddle that appears on a mature male's back—named Humba. The men hack a path through walls of creepers, bamboo and prickly vines, following a trail left by the gorillas. Suddenly, the lead tracker holds up a hand to halt us. He utters a few hoarse coughs—gorilla-speak to tell the great apes we come in peace.

Moments later, about ten yards ahead, Humba yanks aside the creepers to stare at us with imperious grace. His muscled body ripples with power, and his massive head has the gravitas of a Mount Rushmore president. He bares his fearsome canine teeth. "Don't be afraid," a ranger whispers, "he's used to people."

It's the gorillas that have reason to fear. Only about 750 mountain gorillas are left in the world: 350 in Uganda, 270 in Rwanda and a mere 150 here in Congo (formerly Zaire).

They have been ravaged by poaching, habitat loss, disease and the violence of war. Many live in lawless regions, sharing territory with armed rebels from Uganda or the remnants of Hutu militias responsible for Rwanda's 1994 genocide of ethnic Tutsis. Today the biggest threat comes from the Congolese area of their range. Rebel groups opposed to Congo president Joseph Kabila control territory in the turbulent east. The most powerful group is led by an ethnic Tutsi named Laurent Nkunda, who commands thousands of well-armed rebels in the Virungas. Not far from here in January, troops from Nkunda's group killed and presumably ate two silverbacks. A female was shot in May, another male and four females were slain in July; their killers had not been identified as we went to press.

It is the desperate plight of mountain gorillas that has brought me halfway across the world to see what is being done to protect them. For one hour (strictly enforced to minimize the animals' exposure to human disease), we watch the silverback and three adult females and five youngsters as they eat, play and doze in their perilous paradise. Every 10 or 15 minutes, Humba knuckle-walks farther up the slope in search of food, followed by his family. I stumble after them.

When our hour is up and we have begun winding our way back down the mountain, I hear voices and glimpse camouflage uniforms though gaps in the thick foliage. At one point, we come face to face with about 40 soldiers brandishing assault rifles, rocket-propelled grenades and machine guns. Bandoleers of bullets are strung across their chests. "They're Rwandan Army troops," says Emmanuel de Merode, executive director of WildlifeDirect, a Nairobi-based nonprofit organization that helps fund the rangers and trackers. "They've illegally crossed into the Congo, so don't take any pictures, or they'll probably shoot you."

MY JOURNEY to the isolated mountain gorillas of eastern Congo began in Nairobi, Kenya, where I met Richard Leakey, 62, chairman of WildlifeDirect. In the 1950s and 1960s, Leakey's paleoanthropologist father, Louis, best known for his research on human origins in Africa, famously chose Dian Fossey, Jane Goodall and Biruté Galdikas to

PAUL RAFFAELE *has written about bonobos, wild dogs, hippos, pirates, cannibals and extreme polo for* SMITHSONIAN.

PAUL RAFFAELE; PP. 48-49 ANDY ROUSE / CORBIS

The worst massacre of mountain gorillas in 25 years occurred in Congo in July. (The bodies of a male and three females are prepared for removal from Virunga National Park.) Dodging militias, author Raffaele visited two different gorilla clans (one led by silverback Humba, opposite).

BRENT STIRTON / GETTY IMAGES

study our closest animal relatives: mountain gorillas, chimpanzees and orangutans, respectively. Richard's wife Meave and daughter Louise recently helped discover (with Fred Spoor, see "Interview," p. 31) two fossils that change our understanding of the hominid family tree.

Richard Leakey is credited with saving Kenya's elephants. In 1989, as head of the Kenya Wildlife Service, he gained world attention when he set fire to 2,000 poached elephant tusks and ordered his rangers to shoot poachers on sight. Today Kenya has about 25,000 elephants, up from 16,000 in 1989. Leakey lost both legs in a light-plane crash and has received two kidney transplants. Undaunted, he has channeled his energy into building WildlifeDirect, which he created last September. The organization pays for park rangers' salaries and supplies. Until recently, the rangers went unpaid for years at a time. "Since the beginning of armed conflict in eastern Congo [a civil war started in 1994], over 150 rangers have been killed on active service," Leakey says. "Despite the minimal support, Congo's rangers risk their lives on a daily basis."

Since getting to the Congolese mountain gorillas is difficult and dangerous, Leakey assigned de Merode and Samantha Newport, another staff member, to meet me in Congo and help me reach the gorillas there.

My first stop is a short flight away, to the Rwandan capital, Kigali, where I stay overnight at the Hotel des Mille Collines, also known as the Hotel Rwanda. (The tall, modern building looks nothing like the two-story safari hotel in the movie of the same name, most of which was filmed in South Africa.) I sleep uneasily, thinking of the Tutsi families who may have occupied the room while the Hutu militia rampaged outside more than a decade ago. I decide not to take a dip in the swimming pool, which for a time was the Tutsi refugees' only source of drinking water.

The next day, en route to joining some tourists to visit Rwanda's mountain gorillas, I pass Kigali's prison, where an armed guard watches over about 30 men clad in prison-issue pajamas. "They're most likely Interahamwe [Those Who Act Together]," my driver says, referring to the Hutu militia who murdered most of the 800,000 to one million Tutsis and moderate Hutus—men, women and children—during three months in 1994, most of them by machete.

After a two-hour drive, we reach the town of Ruhengeri in the shadow of the Virunga Mountains, a chain of eight volcanoes that thrust up to 14,000 feet above sea level in a 50-mile arc. In 1861, British explorer John Speke was warned that the Virungas' slopes were inhabited by man-like monsters. But only in 1902 did a German officer, Capt. Oscar von Beringe, become the first European to report seeing mountain gorillas, on Mount Sabyinyo's slopes above Ruhengeri. He shot two of them, and the subspecies was named *Gorilla beringei beringei*. Over the next two decades, Western expeditions killed or captured 43 more. Five shot by American

naturalist Carl Akeley in 1921 can be seen in a diorama at New York's American Museum of Natural History.

"As he lay at the base of the tree," Akeley wrote of one of his trophies, "it took all one's scientific ardor to keep from feeling like a murderer. He was a magnificent creature with the face of an amiable giant who would do no harm except perhaps in self-defense or in defense of his friends." To protect the animals, Akeley persuaded Belgium, the colonial power in what was then called Ruanda-Urundi, to create Albert National Park in 1925, Africa's first. It was renamed Virunga National Park in 1969.

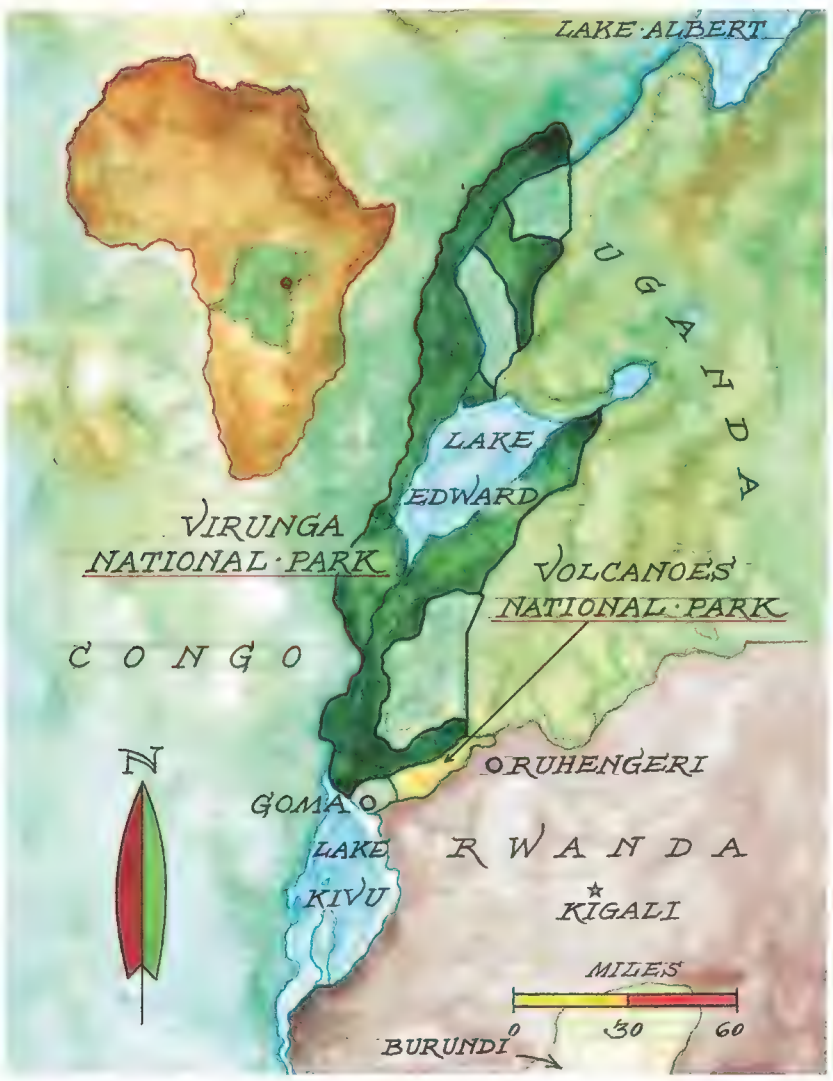
Forty years ago, Dian Fossey fled a bloody civil war on the Congo side of the Virungas, where she had been studying mountain gorillas, to pitch a tent on the Rwandan side. She spent much of the next 18 years there with her beloved gorillas, until in 1985 she was murdered by an assailant, still unknown. Fossey's best-selling memoir, *Gorillas in the Mist*, and the movie based on it, demolished the belief that gorillas were man-killing beasts. It also sparked a multi-million-dollar boom in mountain gorilla tourism. Today visitors are largely confined to the Rwandan and Ugandan preserves because of danger from Congolese militias.

SHORTLY AFTER DAWN, at the headquarters of Volcanoes National Park on the outskirts of Ruhengeri, about 40 tourists, most of them American, gather for a trek to the seven mountain gorilla families on the Rwandan side. Each visitor pays $500 for a one-hour visit. Despite the cost, the park's chief warden, Justin Nyampeta Rurangirwa, tells me that there is a yearlong waiting list. The revenue is vital to Rwanda's feeble economy. "We earn about $8 million yearly from the entrance fees, and more millions from our visitors' hotel, travel and food costs," he says.

When I was last in Ruhengeri, a decade ago, reporting on the fate of mountain gorillas after the Rwandan genocide, the Interahamwe was using the gorilla habitat to move between Rwanda and what was then still called Zaire on raids. The Hutu militia also seeded the mountain passes with land mines to prevent pursuit by their enemies. Nyampeta Rurangirwa sighs at the memory. "Despite the fighting," he says, "only one mountain gorilla was killed on our side of the border. A silverback named Mrithi was shot dead because a soldier stumbled into him during a night patrol and thought he was a rebel."

Ten years ago, the militia were still terrorizing Ruhengeri and villages around it. A few months after I left, they murdered three Spanish aid workers and badly injured an American. Weeks later, they killed a Canadian priest. But Nyampeta Rurangirwa says that these days the town, and the gorillas on the Rwandan side of the border, are safe. Even poaching—a serious problem a decade ago—has been cut to a negligible level, at least in the national park. Rope and wire snares, used to capture small antelope but very dangerous to gorillas as well, are also less of a problem. "Our rangers patrol vigorously in the park, and

Mountain gorilla territory—steep, dense jungles along mostly undefended national borders (below left)—has been refuge to outlaws and rebel groups for decades. Dian Fossey (below, six years before her 1985 murder) was the first primatologist to be accepted into a mountain gorilla group.



MAP: MIKE REAGAN; PETER G. VELT

The eastern Congo town of Goma (above, with the volcano Nyiragongo smoldering in the background), at the base of the gorillas' Virunga Mountains habitat, has been beset by rebels for years, even though civil war ended in 2002. That same year, a volcanic eruption destroyed large parts of the town.

PAUL RAFFAELE

that's a major reason they rarely come across snares nowadays," Nyampeta Rurangirwa tells me.

Mountain gorillas also benefit from the oversight of the Mountain Gorilla Veterinary Project (MGVP), a conservation program proposed by Fossey shortly before her death and now affiliated with the Maryland Zoo. When I came here the first time, the project employed just two veterinarians working out of a bungalow. Now it has a modern base equipped with a laboratory and more than 20 staff members across three countries, including six veterinarians.

The head vet is Lucy Spelman, the former director of the National Zoo in Washington, D.C. She climbs the slopes every couple of days to check on gorillas, looking for symptoms such as limping, coughing, hair loss and diarrhea. Because mountain gorillas are so closely related to humans, she tells me, they can catch such diseases as polio, measles, strep throat, tuberculosis and herpes from us, as well as salmonella and rabies from animals. If necessary, MGVP workers anesthetize gorillas with darts and then inject them with antibiotics to treat infections.

Spelman says that mountain gorillas in the Virunga region have increased by 17 percent since 1989, thanks in part to ranger patrols and the MGVP. "Ours is the first veterinary service to look after an endangered species in its natural environment," she says. She is raising a 4-year-old orphan, Maisha, who was seized from poachers. Only a few other mountain gorillas are in captivity (most gorillas in zoos are western lowland gorillas). Spelman hopes to return Maisha to the wild—a world first if she succeeds.

THE BORDER CROSSING from Rwanda to Congo is an hour's drive to the west, and getting to it is like descending from an earthly paradise into the outer gates of hell. Mount Nyiragongo erupted in January 2002, spewing molten lava down onto the Congo town of Goma. Half a million people fled as the eruption destroyed 80 percent of Goma's commercial district, smothering it with a blanket of lava up to 15 feet deep.

"Goma should not be rebuilt where it is now," Naples University volcanologist Dario Tedesco declared after inspecting the devastation a few days after the disaster. "The next eruption could be much closer to the town, or even inside it." Despite his warning, most of Goma's residents returned—they had nowhere else to go—only to be forced to flee again last December when warlord Nkunda threatened to occupy the town. A counterattack by U.N. peacekeeping forces based in Goma sent the rebels back into the jungles.

The 4,000 U.N. troops, most of them from India, are led by Brig. Gen. Pramod Behl. At his barricaded headquarters, he tells me that the region remains unstable and dangerous and that Nkunda's troops are "still raping and pillaging." He also alerts me to the presence of Mai Mai rebels, fierce Ugandan dissidents holding out along the Rwanda-Congo border, and some 5,000 Interahamwe, who are unwilling to

return to Rwanda for fear of imprisonment or worse. Clearly, he adds, the gorillas "need all the help they can get."

Back in town, my eyes sting and my nose clogs from the volcanic dust thrown up by a brisk wind and aid workers' SUVs. Grim-faced Congolese police patrol the streets in single file; three men allegedly killed a priest and a carpenter the night before, and the police had to rescue the men from a mob. "The authorities put on this show of force for fear the smoldering resentment will flare into violence," says Robert Muir, who has lived in Goma for four years as a conservationist for the Frankfurt Zoological Society.

On Goma's outskirts, shantytowns give way to green fields on either side of a potholed road that is patrolled by hundreds of Congolese soldiers with assault rifles. We pass the vast muddy fields where a million Hutu refugees lived in tents for years after fleeing the Tutsi army. Almost all of them have returned to their villages, and only a few scattered tents remain.

At a turnoff, our four-wheel-drive van heads up a track studded with lava rock, and we bounce around like pinballs. The hills are dotted with mud-hut villages, whose volcanic fields flourish with crops, mostly potatoes and corn. Looming over this deceptively peaceful landscape is Mikeno, the 14,557-foot volcano on whose cloudy slopes live Humba and his family—as well as other Congo mountain gorillas.

Two hours later, we reach our destination, the Bukima patrol post, a dilapidated weatherboard hut that is home to the rangers who accompany the gorilla trackers each day. Jean Marie Serundori, the post's chief ranger, has spent 17 years with the gorillas. "So many of our rangers have been killed by rebels and poachers in the park," he tells me as Newport translates. "Two months ago, hundreds of Nkunda's troops occupied this very spot and looted it, remaining until just two weeks ago. We fled at the time, and have only just returned. [The rebels] are still just a few miles from here." I ask him why he risks his life by returning. "The gorillas are our brothers," he responds. "I know them as well as my own family. If we don't check that they're safe every day, soldiers and poachers might harm them." Rangers sometimes name newborn gorillas after community leaders who have recently died.

Serundori leads us through terraced fields where villagers are turning over the rich soil with hoes. Serundori says that a big silverback named Senkekwe—but better known as Rugendo—is nearby with his family, 12 members in all. "The gorillas like to raid the fields, especially to eat the corn."

As we enter the park, the dense canopy casts the jungle into verdant gloom. I struggle to breathe as we climb a steep, rocky slope. Minutes later, Serundori utters the rasping call that he says the gorillas interpret as "peace." He points at the thickets ahead. "*Le grand chef*, the big chief, is in there."

Within moments, we hear the thock, thock, thock of a silverback beating his barrel chest, a thrilling sound that echoes through the jungle. I tense as the six-foot-tall Rugendo, weighing probably 450 pounds, bustles through the thicket, then relax as he heads past us into the jungle. He is followed by a young, imp-faced male named Noel, so

United Nations "blue helmets" from India are charged with keeping the peace near Goma (a patrol this summer, below). Their main adversary is an anti-government group led by Laurent Nkunda. In January, his troops killed and ate two mountain gorillas, both silverbacks, in Virunga National Park.

BRENT STIRTON / GETTY IMAGES

Mountain gorilla groups usually consist of a silverback male, several adult females and many youngsters. (A group in Rwanda, where mountain gorillas live in relative peace.) Their fur, thicker than a lowland gorilla's, keeps them warm at high altitudes. Males' backs turn silver at age 12.

called, Serundori whispers, "because he was born on Christmas Eve three years ago." Rangers can tell one gorilla from another by the shape of their noses.

Another young male crashes through the branches, performs a perfect gymnast's roll and scurries after his gargantuan father. A potbellied mature female waddles past, barely glancing at us. Serundori leads me nearer to Rugendo, who sits by a cluster of small trees munching on fistfuls of leaves.

The mountain gorillas are swathed in the shaggy black fur that keeps them warm in their high-altitude habitat, between 7,300 and 14,000 feet above sea level. Mountain gorillas, a subspecies of eastern gorilla, are herbivores, apart from the occasional feast of ants. A silverback has to eat up to 75 pounds of vegetation a day to maintain his great bulk. Females, who weigh about half as much, leave their natal groups between ages 6 and 9 to search for a mate and bear their first offspring around age 10. Young males are called blackbacks. Once they begin to show silver, at about age 12, most leave or are forced out of the group, but some stay and wait for a chance at the dominant male's spot.

A dominant male will lead the group, usually around ten gorillas strong, for about ten years before being overthrown. Silverbacks are devoted fathers. If a mother dies or abandons her infant, the silverback will take over its raising, Serundori says, adding: "I've seen it many times." A silverback keeps his family under his watchful eye at all times. He wakes them about 5 a.m. by beating his chest and charging at them. Then he leads them to their first feeding spot for the day. "The family forages for about two miles a day, eating plants, leaves, wild celery, fruits and even thistles," says Serundori. "They play a lot, and take midmorning and midafternoon naps. Around 6 p.m. the silverback chooses a place for them to sleep for the night."

As if on cue, Rugendo rolls onto his side for a midafternoon nap, sated by his bulky snack. He became the master of this group in 2001, when his father was killed by crossfire between the Congolese military and the Interahamwe. Rugendo's easy acceptance of our presence allows the rangers to keep watch over him and his family. But it also allows poachers and soldiers to get dangerously close.

I edge closer, impressed by his brawny arms, many times thicker than a weight lifter's, and salami-size fingers. His massive, furry-crested head holds enormous jaw muscles. While the big chief dozes, Noel and two other sons tussle in mock combat, a favorite gorilla pastime, tumbling, growling, slapping and tugging. The fur on Kongomani and Mukunda, 10- and 12-year-old males, is still black. Noel is especially aggressive, baring his teeth as he repeatedly bangs his fists on the ground and charges his brothers. He leaps on them, pulls at their fur, bites their arms and legs and whacks them on the head. They soon tire of Noel's antics. Now, each time he attacks, one of the brothers grabs him with an arm and tosses him back into the bushes. After

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a few such tosses, Noel turns to peer at the pale-skinned stranger. Up close his dark brown eyes shimmer.

ALONG THE HIKE to meet Humba's family a few days later, Serundori points to several circular patches of flattened and bent grass spread around a spray of tall bamboo. "The gorillas slept here last night," he says. A year earlier, I had been with some chimpanzee-like bonobos in Congo about 500 miles to the west. The lithe bonobos live high in trees and construct elaborate nests by weaving branches together. Adult gorillas build nests on the ground that Dian Fossey described as "oval, leafy bathtubs."

After Humba has peered at us through the thicket and resumed feeding, we settle in to watch his clan. The females and youngsters climb out of the undergrowth, stare at us for a few moments, then begin stuffing vine leaves into their mouths. An infant female jumps onto the back of her much bigger brother and whacks him repeatedly on the head, growling in pleasure, until he scurries away. Now and then Humba stops feeding and sits with one hand cupped under his chin, the other resting on an elbow. With his bulging belly, he looks like a sumo wrestler imitating the pose of Rodin's sculpture *The Thinker*.

Each time the clan moves, a 12-year-old blackback named Nyakamwe plops down between us and his family members, keeping us under watch until they have all disappeared up the slope. He then ambles after them. "He's the sentry," Serundori tells me. "He's there to see them safely

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In July, park rangers and 70 villagers carried the gorillas' massacred bodies (silverback Rugendo, at left) to Bukima for burial, a journey of more than three hours. In addition to Rugendo, much of his family was killed, a group that the author had delightedly watched frolic only months before.

away, and to raise the alarm if he thinks we pose a danger." Again and again, Nyakamwe takes up his post, blocking our path until he sees that the others are out of sight.

I listen carefully for the 20 or so sounds that make up gorilla "vocabulary"—growls, grumbles and grunts. WildlifeDirect's de Merode, who has studied gorillas for eight years, interprets for me. A single grunt or a resounding belch means all is right with the world. But watch out, de Merode says, if a gorilla emits what researchers call a pig grunt—part growl and part grunt uttered with bared teeth. It means he is annoyed.

At hour's end, I reluctantly head down the slope. When we encounter the Rwandan Army patrol that had crossed into Congolese territory, I heed de Merode's warning not to take any photographs. But I approach the most important-looking soldier and offer a handshake. He seems unsure what to do and fingers the butt of his machine gun. After a few tense moments, my wide smile and "G'Day mate, howya goin'?" evoke a cautious smile. As the soldier tentatively shakes my hand, de Merode says, "We'd better leave before anything bad happens."

THE CONGO MOUNTAIN GORILLAS' future depends largely on the militias. At U.N. peacekeeping troops' headquarters in Goma, Brigadier General Behl tells me why a quick resolution of the conflict is unlikely. "It's a very difficult task for the [Congo] government," he says, frowning. "It's a long way before they can bring all these groups back into the mainstream."

Paulin Ngobobo, the senior warden of Virunga National Park's southern sector, says that even though President Kabila has promised to protect the mountain gorillas, "after two civil wars, our country is very poor, and we need outside support to save them." WildlifeDirect, the Frankfurt Zoological Society and other conservation organizations are helping the park financially, he says, but much more needs to be done to combat the military threat.

Leaving Ruhengeri, I take a last look at the Virunga Mountains, shimmering like blue glass in the misty air. On the other side of those steep slopes, Humba, Rugendo and their families are playing, mating, caring for their young or sleeping off a hefty snack. How long their serenity continues depends on the courage of the people who protect them, the goodwill of the world to help and the willingness of rebel militias and army troops to leave them alone.

THE SHOCKING NEWS came at the end of July. Four mountain gorillas in Congo had been killed by unknown assailants, for reasons unknown. As details trickled out, I learned that the dead were among the mountain gorillas I had visited: Rugendo and three females from his group, Neeza, Mburanumwe and Safari. In August, the remains of the group's last adult female were found; her infant is presumed dead. It was the worst massacre of mountain gorillas in more than 25 years. Rangers tracked down six survivors, including Noel, Mukunda and Kongomani, who was caring for Safari's infant. MGVP vets are now caring for the youngster in Goma.

Rugendo had what I perceived to be a gentle nature, allowing me to approach close to him while he ate leaves and as his offspring played nearby. He was so trusting of humans that he even fell asleep in front of me. The villagers and rangers who knew Rugendo obviously respected him. About 70 villagers carried the mountain gorillas' massive bodies from the forest to bury them near the Bukima patrol post.

For a video of Paul Raffaele with the Congo gorillas, see Smithsonian.com/gorillas.

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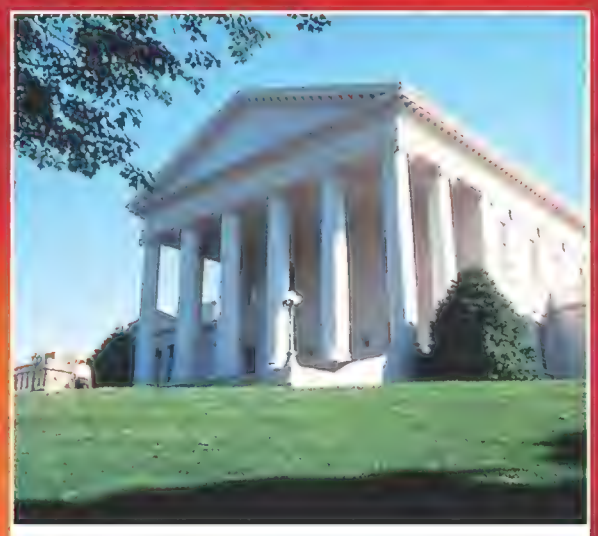

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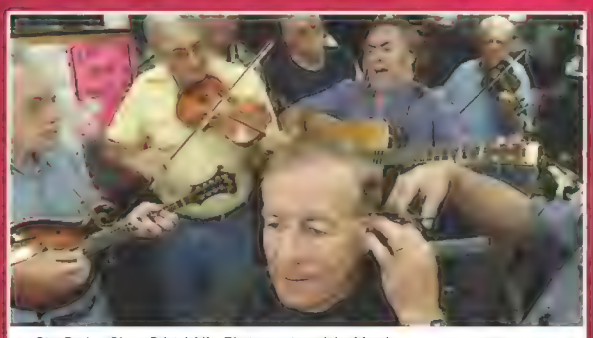

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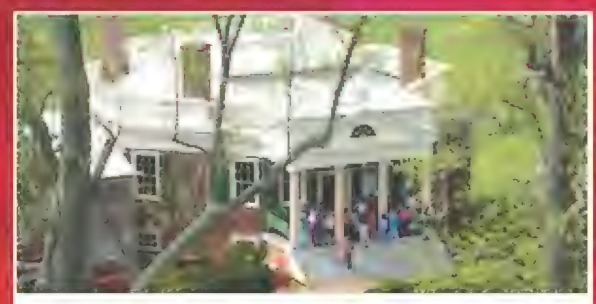

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BY MICHELLE NIJHUIS **PHOTOGRAPHS BY RICHARD HOWARD**

TEAMING UP WITH THOREAU

THE UPRIGHT CITIZENS of Concord, Massachusetts, didn't think much of young Henry David Thoreau. The cabin on Walden Pond, the night in jail for tax evasion, the constant scribbling in journals—it all seemed like a waste of a perfectly good Harvard education. Even more mysterious was his passion for flowers. "I soon found myself observing when plants first blossomed and leafed," Thoreau confided to his journal in 1856, "and I followed it up early and late, far and near, several years in succession, running to different sides of the town and into the neighboring towns, often between twenty and thirty miles in a day."

A philosopher and political activist, Thoreau was also one of the first ecologists, closely observing the growth of forests. His meticulous notes on flowers around Concord, Massachusetts (birdfoot violets, opposite), are a boon to scientists studying climate change (Richard Primack, left, and Abe Miller-Rushing with Thoreau at Walden Pond, near a replica of Thoreau's cabin).

Thoreau planned to turn his vast botanical records into a book, but he died of tuberculosis in his mid-40s, the project undone. *Walden* and his handful of other published writings languished in near obscurity, and even his close friend and mentor, Ralph Waldo Emerson, said that Thoreau had squandered his talents on the woods. "I cannot help counting it a fault in him that he had no ambition. . . . Instead of engineering for all America, he was the captain of a huckleberry party," Emerson lamented in his eulogy of Thoreau.

Walden, of course, is now a classic of American literature, and Thoreau is considered a secular prophet. In Concord, tourists buy T-shirts printed with Thoreau's best-known sayings, including "beware of all enterprises that require new clothes." Much has changed in Concord. On the shore of Walden Pond in summer, warblers and blueberry bushes are still commonplace, but so are teenagers in shocking-pink bikinis.

Thoreau's unassuming gravestone, marked simply "HENRY," rests on a mossy ridge not far from the center of town and is decorated with pine boughs and pebbles left by admirers. On a sunny slope nearby, two botanists crouch in the grass, paying a different sort of tribute to Concord's famous son.

"We've got bluets. First time this year," Abe Miller-Rushing says.

"Are you sure you didn't see some yesterday?" teases his mentor, Richard Primack of Boston University.

"First time," Miller-Rushing says with a grin.

The late April afternoon is clear and warm, and the slope at Sleepy Hollow Cemetery is dotted with the pale, four-petal blooms of the native plant. Were Thoreau here to marvel at the changes in Concord, these delicate flowers might surprise him most of all.

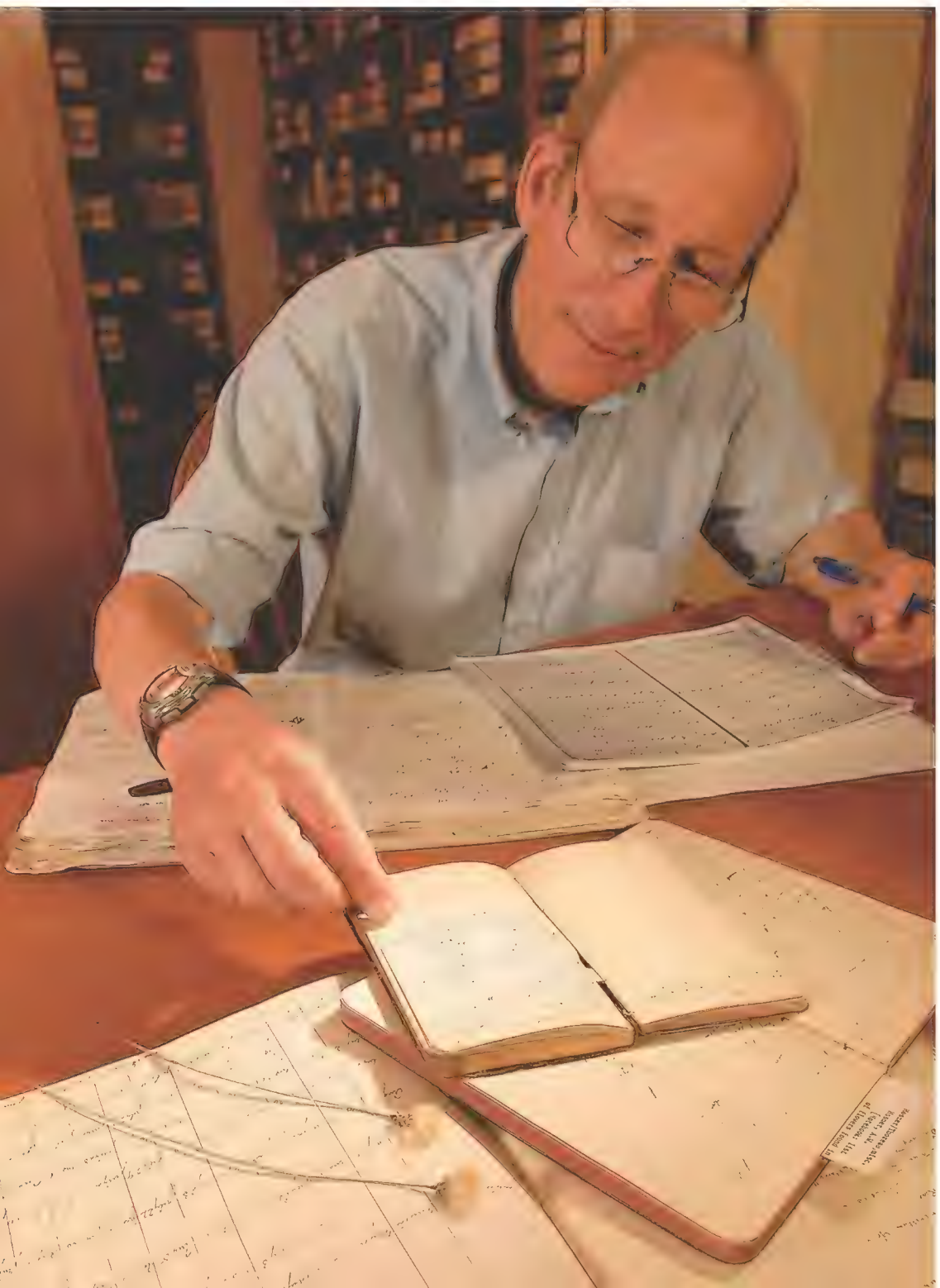
"HOW SWEET IS THE perception of a new natural fact!" Thoreau remarked in his journal in 1852.

Throughout the 1850s, while his neighbors toiled in their fields and offices, Thoreau spent hours each day walking Concord's woods and meadows, contemplating nature. His outings, he insisted, were anything but leisurely: "I have the habit of attention to such excess," he wrote, "that my senses get no rest—but suffer from a constant strain."

He taught himself to recognize hundreds of local plants, placing specimens in his well-worn straw hat. "When some whom I visited were evidently surprised at its dilapidated look, as I deposited it on their front entry table," he wrote, "I assured them it was not so much my hat as my botany-box."

The earliest blossoms and other signs of spring especially fascinated Thoreau. "I often visited a particular plant four or five miles distant, half a dozen times within a fortnight, that I might know exactly when it opened," he wrote. The author Louisa May Alcott, a Concord resident, remembered that the writer "used to come smiling up to his neighbors, to announce that the bluebirds had arrived, with as much interest in the fact as other men take in messages by the Atlantic cable."

Thoreau organized his eight years of botanical notes into detailed monthly charts, listing the first flowering dates for several hundred species. After his death, the dozens of pages of charts were scattered to libraries and collectors, forgotten by all but his most ardent students. Thoreau's data finally found a champion in Bradley Dean, an independent scholar, who supported his research on Thoreau with a trickle of fellowships and grants. Dean, who died in 2006, tracked down every page of Thoreau's charts, collecting



Thoreau (top, at age 39) inspired others to record signs of springtime (Primack at the Concord library with the 100-year-old journals of Alfred Hosmer). Opposite, bluets at Sleepy Hollow Cemetery, the burial place of Thoreau, Louisa May Alcott, Ralph Waldo Emerson and Nathaniel Hawthorne.

TOP: BETTMANN / CORBIS

SOME FLOWERS IN CONCORD, LIKE THE BLUETS IN SLEEPY HOLLOW CEMETERY, ARE BLOOMING WEEKS EARLIER THAN IN THOREAU'S TIME.

a full set of copies at his home in rural New Hampshire.

Primack, 57, lean and sharp featured, had spent decades researching tropical forests in Malaysia, Central America and elsewhere before turning to his own backyard in 2002. Like Thoreau, he was interested in springtime, but his motivations went beyond a simple love for the season: Primack wanted to study how the natural world was responding to global warming. "Over the coming decades, we're likely to see a lot of significant changes caused by global warming—more and more extinctions, for example—but we can't measure most of those things yet," he says. "Bird migrations and flowering times are the best indicators we have that natural communities are starting to change."

Primack began searching for natural-history records from Massachusetts, talking to bird-watchers and amateur botanists. Through a former student, he learned that Thoreau, of all people, had collected exactly the sort of data he was looking for. In 2003, Primack called Dean to ask about his collection of Thoreau's charts. Dean, not at all surprised, said he'd expected that scientists would one day come looking for Thoreau's data.

Dean wasn't the first person to take an interest in Thoreau's record keeping. Sixteen years after Thoreau's death, an enigmatic Concord shopkeeper named Alfred Hosmer decided to continue Thoreau's botanical project. In 1878, and then consistently from 1888 until 1902, he recorded the first flowering dates of more than 700 species in the Concord area. A bachelor, Hosmer spent his Sundays exploring meadows, swamps and even the town dump. "Fred is . . . better informed about Thoreau's haunts than any man living or dead," wrote his friend Samuel Jones. "I, poor miserable I, *admire* Thoreau; Fred *lives* him!" Like Thoreau, Hosmer turned his field notes into hand-lettered tables, sometimes pressing a leaf or flower between the pages. He died in 1903, leaving no explanation for his dedication.

Primack, joined by his doctoral student Miller-Rushing, now had detailed reports on Concord's flora from Thoreau and Hosmer, and it was time to compare the past with the present.

IT'S NOT EASY to collaborate with dead botanists. Thoreau's penmanship was atrocious, and he used antiquated botanical names. Using the research of an amateur botanist and Thoreau admirer named Ray Angelo, Primack and Miller-Rushing deciphered Thoreau's and Hosmer's tables.

During their first year of fieldwork, in 2003, Primack and Miller-Rushing searched the sunniest, warmest corners of Concord, just as Thoreau had, looking for the first blooms. They found a place on the campus of the private Middlesex School where flowers turned up especially early. They talked a local farmer into allowing them to survey his fields. They walked the railroad tracks behind the site of Thoreau's cabin at Walden Pond.

When Primack found the season's first blue violet bloom on the gravel railroad bed, he was so absorbed that he failed to hear a construction truck approaching on the rails. The driver pulled up just 20 yards from the surprised researcher and angrily demanded that he explain himself. Primack quickly made clear he was no saboteur, but a botanist, and vowed to be more cautious. But as Thoreau himself surely would have, Primack and Miller-Rushing continued to inspect the tracks for flowers, paying for their

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RICHARD PRIMACK AND ABRAHAM MILLER-RUSHING

persistence with a few run-ins with local police.

"We learned that if you're going to look at plants along the tracks, look at them briefly, always have a lookout and be ready to run into the woods," Miller-Rushing says.

In the spring of 2004, they began reprising Thoreau's work in earnest. With the help of several undergraduates, Primack and Miller-Rushing combed the warmest places in town. As they navigated crowds of tourists at Minute Man National Historical Park or stepped around the sunbathers at Walden Pond, they found they had a lot in common with their quirky collaborator. "We'd come out of the woods, sometimes covered with mud, and start asking people if they would move their towels so we could see the flowers," Miller-Rushing remembers. "That's when we realized that we weren't normal people."

What they discovered wasn't quite normal, either. Primack and Miller-Rushing compared three years of their results with those of Thoreau and Hosmer, focusing on the 43 plant species with the most complete records. They learned that some common plants, such as the highbush blueberry and a species of sorrel, were flowering at least three weeks earlier than in Thoreau's time. On average, they found, spring flowers in Concord were blooming a full seven days earlier than in the 1850s—and their statistics clearly showed a close relationship between flowering times and rising winter and spring temperatures.

Amateur naturalists (Kathleen Anderson in Middleboro, Massachusetts) are pooling their records to track how wildlife responds to global warming.

Primack and Miller-Rushing also found other naturalists who had carried on Thoreau's tradition of obsessive observation. Robert Stymeist, a retired accountant and devoted birder, frequents the trails of Mount Auburn Cemetery in Cambridge, a shady, arboretum-like spot that attracts colorful waves of migrating birds each spring. Stymeist, 59, has been watching and recording them for almost as long as he can remember: when he was just 10 years old, too young to be trusted with a key to the cemetery gates, he began sneaking into the grounds, binoculars and bird guide in hand. "It's just always been my spot," he says.

The ecologists' quest also led them to Kathleen Anderson, a great-grandmother and lifelong birder, who has lived on a wooded property south of Boston for nearly six decades. Born in rural Montana, she remembers that her mother rewarded her and her siblings for spotting the first bluebird or daffodil, inspiring a record-keeping habit that Anderson, now 84, continues to this day. Her elaborate daily diaries, shelved in her low-ceilinged farmhouse, detail not only family weddings, births and the news of the day but also natural phenomena ranging from bird arrivals to frog choruses to the newest blooms in her yard. "I guess I'm an old-fashioned naturalist—I'm curious about everything," she says. "But I never in my wildest dreams thought that these records would be of any significance. I even wondered if my children would be interested in them."

Like Thoreau's data, the records of these naturalists were idiosyncratic and tricky to analyze. Amateurs don't usually record exactly how long they searched for an animal, or how many people were looking, or how certain they were about what they saw—and these gaps make professional scientists nervous. "Scientists are used to analyzing other scientists' data," says Miller-Rushing. "We're not so comfortable venturing into the world of personal journals."

But Primack and Miller-Rushing found that the bird records from Mount Auburn, Anderson's diaries and data collected by trained researchers at the Manomet Center for Conservation Sciences on the Massachusetts coast all told a similar story. On average, migratory birds are turning up earlier every year in eastern Massachusetts. And as with the precocious blooms in Concord, the shifts in schedule are best explained by warming temperatures.

EVEN IN THE mythic American landscape of Concord, global warming is disrupting the natural world. Since Thoreau's time, average temperatures have risen more than four degrees Fahrenheit because of local urban development as well as global climatic warming. Concord, once a farming community, is now a busy suburb—Boston is just a half-hour drive from Walden Pond—and expanses of warmth-absorbing concrete and blacktop have created a "heat island" of higher temperatures in the greater metropolitan area.

Seasonal routines such as migration, blooming and breeding are the pulse of the planet, and everything from agriculture to allergy outbreaks depend on their timing—

{ CONTINUED ON PAGE 65 }

PRIMACK AND MILLER-RUSHING HAD A LOT IN COMMON WITH THEIR QUIRKY COLLABORATOR. "WE REALIZED WE WEREN'T NORMAL PEOPLE."

and, often, their precise coordination. "Pollinators have to be around when plants are flowering, seed dispersers have to be around when seeds are available, leaves have to be around for herbivores to eat them," says Miller-Rushing. "There are endless numbers of these relationships, and we don't have a lot of good information about what happens when their timing gets jumbled up."

While some flowers in Concord, like the bluets in Sleepy Hollow Cemetery, are blooming weeks earlier than in Thoreau's time, others haven't changed their schedules. Observations from Thoreau and other naturalists reveal that plants are reacting to temperature changes more dramatically than short-distance migratory birds, suggesting that climate change could divide plants from their pollinators. Spring's acceleration is far from orderly.

That's disturbing news, because many plants and animals are already declining in eastern Massachusetts for other reasons. Though Concord has more parkland and natural spaces than many communities, thanks to strong local support for land conservation, human habits have changed over the past century and a half, and habitats have changed with them. River meadows, once mown for hay, have declined, along with local agriculture, and many have gradually turned to swamp forest. As hunting dwindled, white-tailed deer began devouring woodland plants. Invasive plants such as Oriental bittersweet and black swallowwort have infiltrated Concord, even covering the banks of Walden Pond. "The woods are being repopulated by things Thoreau never even knew about," says Peter Alden, a Concord native and veteran naturalist.

Of the nearly 600 plant species for which Thoreau recorded flowering times during the 1850s, Primack and Miller-Rushing found only about 400, even with the help of expert local botanists. Among the missing is the arethusa orchid, which Thoreau described with admiration in 1854: "It is all color, a little hook of purple flame projecting from the meadow into the air. . . . A superb flower."

WALKING THE WELL-TRAVELED path that circles Walden Pond, searching for the earliest flowers of the highbush blueberry, Primack says his results make him uneasy. "I don't think scientists should just be studying things until they go extinct," he says. "I think they should be doing something to make sure they don't go extinct." He supports "assisted migration," deliberately moving rare plants and animals to new, more promising habitats. The idea is controversial among biologists, many of whom fear that the transplants could interfere with native inhabitants. But Primack argues that the risks are low and the need is pressing. "In the past, some of these species might have been able to move on their own, but now there are barriers—highways, cities, fences," he says. "We have an obligation to move them."

Primack and Miller-Rushing argue good-naturedly about whether certain plants and animals can adapt to climate change, but they, and other ecologists, know such issues are far from resolved. "Now that we know what's changing, what are we going to do about it, and what are species going to do on their own about it?" asks Miller-Rushing. "Those are unanswered questions."

For now, Primack and Miller-Rushing are helping other scientists build a national network of observers—ranging from schoolchildren to amateur naturalists to professional ecologists—to collect data on flowering times, bird migrations and other signs of the seasons. The goals are not only to understand how plants and animals are responding to climate change but also to fine-tune future environmental restoration efforts and even allergy forecasts. It's a project that will require Thoreauvian stubbornness.

An inspiration for the conservation movement, Walden Pond is a popular state preserve. "I am prepared for strange things," Thoreau once wrote.

"These things are almost always heroic efforts by individuals," says Julio Betancourt, a hydrologist with the U.S. Geological Survey and a co-founder of the national observation network. "Thoreau, and those that came after him, made a decision to make these observations, and to make them routine. To continue that for decades takes a lot of commitment and stick-to-itiveness and vision."

Visit Smithsonian.com for a video of Concord's flora.

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Deep-sea white anglerfish are adapted to frigid, dark, pressure-packed depths of 13,000 feet or more. Less than an inch long, the males are parasites, latching onto much larger females to deliver sperm. Opposite: *Munnopsis* (up to 0.8 inch), a distant relation of the wood louse, walks on the seafloor or swims backward.

CREATURES OF THE DEEP!

A new book of photographs taken in the ocean depths reveals a world abounding in unimagined life

BY LAURA HELMUTH

THE FIRST SIGNS that life can exist in the deepest seas were nets full of mangled goo. The Challenger Expedition, an around-the-world oceanographic study led by Scottish naturalist Charles Wyville Thomson in the 1870s, trawled as deep as 26,000 feet and pulled up more than 4,000 unknown species. The strange creatures, many of which were gelatinous and didn't survive the trip to the surface, overturned the scientific wisdom of the time, which held—reasonably enough—that nothing could survive in a world without light, at temperatures just above freezing and at crushing pressures. It's still hard to believe.

Since then, people have explored the deep ocean—the region below about 650 feet—from inside tethered metal balls called bathyspheres and modern mobile submersibles, and they've sent down remotely operated underwater vehicles (ROVs) equipped with cameras. The deep sea is the largest ecosystem on earth, plunging to more than 37,000 feet below sea level at the Marianas Trench in the Pacific. It accounts for 85 percent of the space where life can exist and holds an estimated ten million or more species. "But we're still trying to figure out what's out there," says marine scientist Nancy Knowlton of the Smithsonian's National Museum of Natural History.

A new book, *The Deep* (The University of Chicago Press), by French documentary film producer Claire Nouvian, may be the most comprehensive look at this mysterious world that we surface dwellers will get for a long time. The more than 200 photographs—most taken by scientists from submersibles and ROVs, some shot for the book—show just how head-shakingly bizarre life can be. The scientists who discovered the creatures were apparently as amused as we are, giving them names such as gulper eel, droopy sea pen, squarenose helmetfish, ping-pong tree sponge, Gorgon's head and googly-eyed glass squid.

Above: The small *Benthocodon* jelly has been found near sea mountains, some of which dwarf the Himalayas. Opposite: The googly-eyed glass squid (8 inches) camouflages its body by filling it with ink.

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Right: *Grimpoteuthis*, a type of Dumbo octopus (up to 5 feet), lives in every ocean, near the bottom. It flaps its earlike fins to swim. Below, this coastal California resident (0.8 inch) clearly taxed the taxonomic imagination. Scientists call it the "pigbutt worm."

Below: The glowing sucker octopus (to 20 inches) may have inflated its body to defend itself against the submersible that took its photo. Opposite: Jellyfish, like *Botrynema brucei*, are some of the most abundant creatures in the sea.

GIVEN THE COLD, THE DARK AND THE SCARCITY OF FOOD, DEEP-SEA ANIMALS TEND TO BE "SIT-AND-WAIT" PREDATORS.

Nouvian herself made two dives in a submersible, to 3,200 feet. The first thing she noticed, she says, was that "it's very slow. You can tell that all their laws are different." Given the cold, the dark and the scarcity of food, animals tend to be "sit-and-wait predators," floating around and taking what comes their way rather than burning energy to pursue and attack.

The main source of food in the deep is "marine snow," flakes of dead things and fecal matter that drift down from the bright ocean. Sometimes entire feasts fall to the seafloor: a few years ago, oceanographers discovered several species of snails and worms that dine on dead whales. Other deep-sea food webs are fueled by hydrothermal vents, cracks in the ocean floor where seawater mixes with magma and erupts in hot, sulfur-rich plumes. Microbes have evolved the ability to convert chemicals from these vents into energy—a way of life that was unknown before 1977.

There's little or no sunlight in the deep, but most animals "bioluminesce," flashing like fireflies. They turn on headlights to see food or attract mates; anglerfish dangle wormlike glowing appendages to lure prey. Some deep-sea squid shoot a cloud of bioluminescence to distract predators, much as upper-ocean squid squirt black ink. Jellyfish, often transparent in the oceans above, tend to be dark, which shields them from attention while their swallowed prey bioluminesces in its death throes. Down below, says Nouvian, the bioluminescence—some in short flashes, some in shimmering curtains, some hopping about like grasshoppers—"is more dramatic than the most dramatic sky with shooting stars."

The drama of discovery shows no sign of ending. In some surveys, 50 percent to 90 percent of the animals hauled up from the deep are unknown. We'll have to keep expanding our conception of what it means to be an Earthling.

Visit Smithsonian.com/ecocenter for a special report on the state of the oceans.

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Opposite above: Siphonophores (16 inches) trail stinging tentacles. Opposite below: the vampire squid (16 inches) looks more menacing than it is. Left: the Yeti crab (8 inches) was discovered near Easter Island in 2005.

SWAMP GHOSTS

A journalist's quest to learn more about his father's death in New Guinea in 1942 leads him to another World War II casualty: a U.S. bomber that crashed there the same year

BY JOHN DARNTON

PAPUA NEW GUINEA

—or PNG as it's called, sometimes with affection, sometimes in exasperation—is the kind of place tourist brochures describe as "the land that time forgot." It would be just as accurate to call it "the land that forgot time." Schedules are not rigidly adhered to. In the capital, Port Moresby, young men with no visible means of support hang out along the roads and markets, giving the place a laid-back feel but making it dangerous at night. The topography of mountains and jungle, beautiful but almost impassable, renders national identity elusive. The six million-plus people—80 percent of whom live in remote villages—speak about 850 languages, owe allegiance largely to local clans and eke out a subsistence existence hunting wild pigs and growing papaw and yams and other foods. Many lives have hardly changed from past centuries, except that cannibalism all but petered out in the mid-1970s, and, with the blessings of missionaries, a lot of people now wear castoff Western shirts and shorts. (It's not unusual to encounter a fisherman paddling a dugout canoe wearing, say, a Bucky Badger T-shirt from the University of Wisconsin.)

This past May, I visited PNG because I was eager to see the country where my father was killed in World War II. He was a war correspondent for the *New York Times*—Byron Darnton was his byline—and the troopship he was on was bombed as it was about to disembark soldiers onto a sandy beach in October 1942. I was 11 months old at the time and so have no memory of him. But of course New Guinea was always more than a dot on the map for me. In our living room we had a patriotic globe with stars to mark major American battlefields. In my childhood naiveté, I thought the manufacturer of the globe had put the one on Buna, on the northern coast of what was then called Papua, to commemorate the spot where my father fell.

Reporter Byron Darnton, the author's father, in 1942.

New Guinea was conscripted into war, caught between the Japanese and the Allied counteroffensive from the south. For the most part Papuans did not fight, but both sides pressed many into service as bearers, carrying supplies and stretchers of wounded men across mountains and through miles of steaming jungle. (Their nickname, unthinkable today, was Fuzzy Wuzzy Angels.) Almost all of them have died by now. Yet the war seems anything but remote, largely because its rusting relics are so much a part of the landscape. Sunken freighters, submarines and troopships rest on the bottoms of harbors and hidden bays. The blackened hulls of bombed-out planes sit beside old airstrips, and debris from hundreds of crashed planes lies camouflaged in the mountainous rain forests and lowland jungles. So many soldiers died—including many thousands of Japanese never accounted for—that even today, after heavy rains, villagers report an occasional skeleton rising up in the mangrove swamps like a mummy in a horror movie.

It's not surprising, then, that PNG has become favored terrain for war buffs. (Last year, an estimated 4,000 people made the grueling weeklong trek on the Kokoda Trail across the Owen Stanley Mountains, where Australian soldiers pushed back the Japanese; as recently as ten years ago only about 100 made the hike.) Poking around the pillboxes and overgrown ruins of the Japanese bases at Buna and Gona, Australian, American and Japanese tourists bump into one another, sometimes in awkward silence. Perhaps more than anything else, PNG has become a hunting ground for "warbird" enthusiasts looking for missing plane wrecks. Passionate treasure hunters, they like nothing better than to hop into helicopters for spotting missions, hack through the baking, merciless jungle, debrief villagers and hire local guides, all for that magical moment when they might uncover a Kittyhawk or Bristol Beaufighter that dropped out of the sky more than 60 years ago. Among them are a special breed, the salvagers, who not only locate the planes but also extract them, or pieces of them, for export, usually selling them to museums or to private collectors.

Of all the wrecks on PNG, none is as fabled as the "Swamp Ghost," a B-17E Flying Fortress that ran out of fuel on an ill-fated bombing mission in early 1942 and was ditched in the Agaiambo Swamp about eight miles inland on the northern coast. There the plane rested, intact and more or less unmolested, in soggy splendor for 64 years—that is, until May 2006, when an American salvager took it apart and removed it. This caused such a controversy that the plane was stopped from leaving the country. It sits crated in a warehouse near the coastal town of Lae. The episode raises what has become a burning issue: Who has the right to sell war surplus and what should be done with it in the face of a burgeoning international market? The debate, which taps into anger over the growing realization that the island's natural resources are being exploited by illegal loggers and rapacious mining com-

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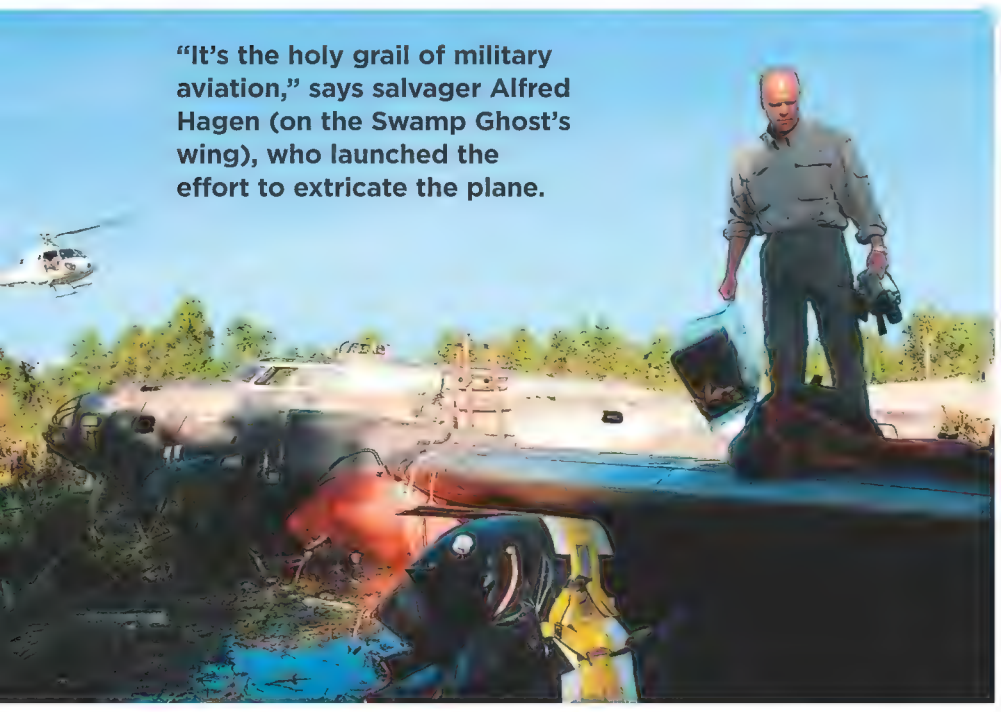
MAP: MIKE REAGAN; JOHN DARNTON COLLECTION; P. 79 FREDERIQUE OLIVIER; (INSET) THESWAMPGHOST.COM; PP. 76-77 FREDERIQUE OLIVIER

"IT WAS JUST SPECTACULAR. IT WAS LIKE STEPPING BACK IN TIME. . . . YOU COULD IMAGINE THE CREW LEAVING IT."

Justin Taylan (left, in 2003) became impassioned about World War II after hearing his grandfather's war stories. Several trips to the Swamp Ghost (below, the nose) fed Taylan's attachment to the plane.

panies, has roiled Parliament and the government of Sir Michael Somare, the imposing leader who has served, off and on, as prime minister ever since he led the country to independence from Australia in 1975.

The salvagers claim that the villagers near the crash site were persuaded to give up the relic and that a local chief even performed a ceremony to appease the spirits of the swamp. But other Papuans, who have a deep attachment to ancestral land and are apt to extract money from strangers just to set foot on it, clearly feel different. Augustin Begasi, the 39-year-old son of a chief of the coastal village of Bendoroda, organized a group to try to intercept the plane before it reached a barge offshore. The salvagers claim the posse wanted to extract money because the barge was in their waters. In any case, Begasi and company were dispersed by police, who they believe were paid by the salvagers or someone else to help get the plane out. Begasi



"It's the holy grail of military aviation," says salvager Alfred Hagen (on the Swamp Ghost's wing), who launched the effort to extricate the plane.

couldn't have stopped it anyway, since the plane was ferried out overhead by a Russian-built military helicopter; he could only watch as it was lifted out to the barge.

"They should have given us money, because it was our accustomed land," Begasi told me. "The plane would bring tourists, but now there is nothing. That village has no name now. If they left it there, it would have a name by now."

Something about the Swamp Ghost, I came to learn, drives people around the bend.

I FIRST LEARNED ABOUT THE PLANE from Justin Taylan, a 29-year-old bachelor from Hyde Park, New York, whose consuming interest in the Pacific theater dates back to a particular day in 1992. An eighth grader then, he had asked his grandfather, Carl Thien, who had served as a combat photographer there, to help him with a school report about the B-29 bombing campaign of Japan. "He became furious with me and said: 'We were fighting in New Guinea long before there were any B-29s.'" Thien took him aside and gave him a firsthand education in the horrors of hand-to-hand jungle fighting. Later that year, the two visited PNG; Justin climbed all over a wrecked Japanese bomber and was hooked. Today, after seven more visits to PNG, Taylan pursues a hobby that is all-consuming. He searches out wrecks, returns dog tags and other artifacts to surprised owners, produces DVDs and runs a Web site (PacificWrecks.com) that draws 45,000 hits a month.

The law on ownership of salvaged wrecks has evolved over the years. Basically, the U.S. Navy does not relinquish claims to ships or aircraft, whether sunken or above water. The Air Force, under a decision from its general counsel, regards any plane that crashed on land before November 1961 as abandoned, and hence fair game for salvagers. That is not true, however, for a plane that crashed and sank in water, which presumably means at sea, not in a swamp. (Though who knows? A sharp lawyer might have fun trying to parse that.)

Taylan said the name Swamp Ghost was coined when Australian troops "rediscovered" the plane on maneuvers 35 years ago. Spotting it from a helicopter, they landed on the plane's wing and found the semi-submerged aircraft eerily untouched. The machine guns were in place, fully loaded, and in the cabin there was a thermos with what used to be coffee inside. Some claim there was even an ashtray with cigarette butts. The nickname stuck, and over the years missionary pilots and others used the wreck as a navigational reference point. Sometimes, with the coating of camouflage olive paint burned off the roof by the sun, its aluminum skin gleamed in the sunlight like a giant silver dagger, visible for miles around. Other times, when the kunai grass grew 12 feet high and engulfed it, the Swamp Ghost dropped from sight, making the nickname all the more appropriate.

"On my first visit, in 2003, I'll never forget clearing away the kunai grass," Taylan told me, speaking rapidly in his excitement. "It revealed the sides, and I saw the U.S. Army Air Forces markings, a white star with a large red dot in the center—they called it a 'meatball' in those days, and it was later phased out because it was thought it might be confused with the Japanese rising sun. And the sides were in perfect condition. It was just spectacular. It was like stepping back in time, back to 1942, to see the plane and the 'meatball' and the door on it, the waist door, still propped open 45 degrees. You could imagine the crew leaving it."

The crew's fate, in fact, is part of the plane's mystique. On the first long-range bombing mission against the Japanese, the B-17 took off from Australia just before midnight on February 22 with the aim of attacking ships at Rabaul on Japanese-held New Britain at dawn. From the outset the mission was plagued by mishaps. With bad weather, incomplete maps, novice pilots and mechanical problems, four of the nine bombers never even got off the ground. "It was dark as hell at night," recalled Clarence LeMieux, the engineer, now 90 years old and living in Spokane, Washington. "By the time we got there, we lost all the other planes but ours and one more. We ran into tornadoes—three or four of them—and we couldn't even see the harbor." What happened next is debated—some say the bomb bay doors didn't open—but in any case the plane made a wide circle and came in for a second run before it

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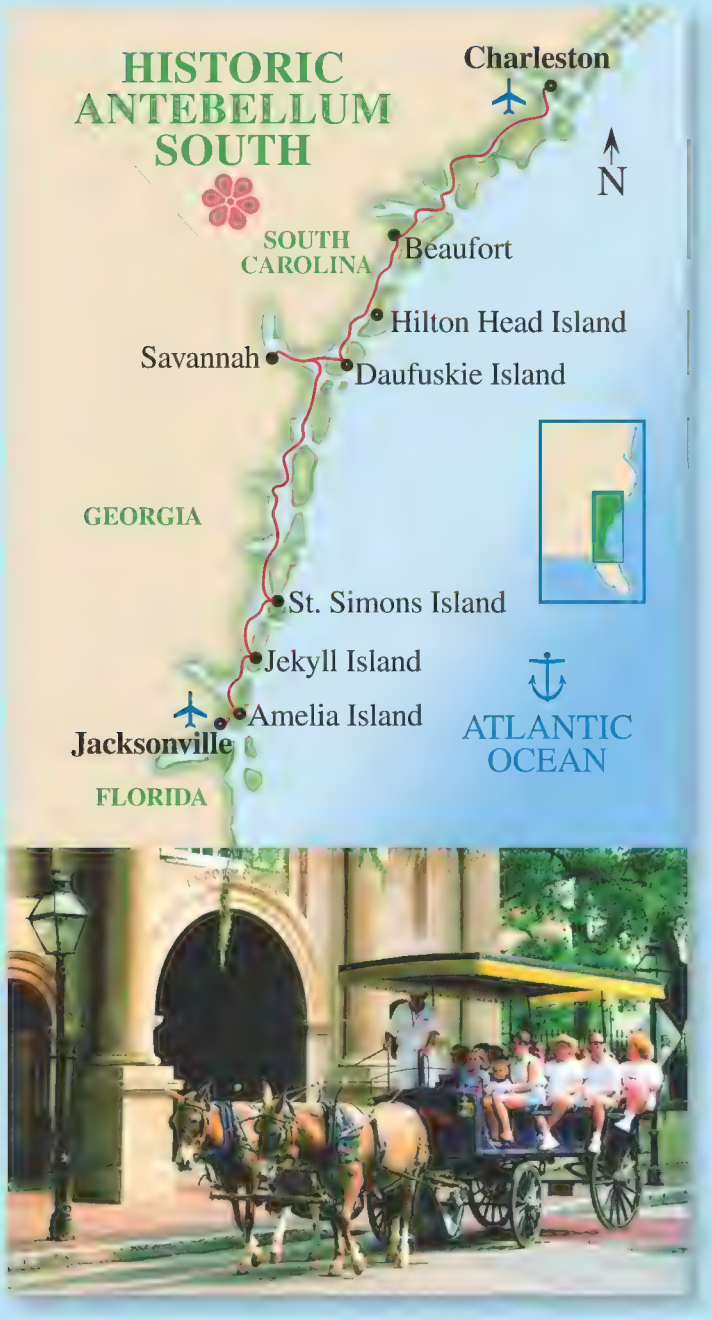

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dropped its load. Then it fought off half a dozen Japanese Zeros, had its right wing shot through by an antiaircraft shell that didn't explode, climbed to shake off pursuers and headed off. All of this took a toll on fuel. Capt. Fred Eaton hoped to make it to Port Moresby, which meant flying over the mountains. "I looked over at the fuel gauges, and they were pretty damn low," said LeMieux. "I said: 'We're not going to make it with this fuel.' We saw what looked like a wheat field—all this pretty grass—and Fred says, 'Let's put her down here.' "

The belly landing was perfect; only the propellers were bent. But when the doors were opened, the crew men realized they had set down in four to eight feet of water. "We jumped off, and the damned stuff was up to our neck," said LeMieux. Only one of the nine was injured, the navigator, George Munroe, and only slightly. "We had these two thin sheets of wood in the bomb bay to keep the wind out of the compartment," Munroe, age 89, recalled from his home in Falls Church, Virginia. "And I stuck my head between them and got stuck there when the plane stopped. They pulled me out, and someone said: 'My God, your throat's cut.' That kind of shakes you up. But they had a flask, and they poured water on me, and it turned out I had little scalp cuts."

For two days, the crew members hacked their way through razor-sharp kunai grass, trying to rest at night on makeshift mounds of it, which kept sinking. They were exhausted and famished. (Their emergency rations had sunk.) When they finally reached dry land, they were so badly bitten by mosquitoes they couldn't sleep. Several began to hallucinate. "A friend and I suddenly saw a mess hall," said Richard Oliver, the bombardier, at 87 long retired and living in Tiburon, California. "So we decided to get some ice-cold canned tomatoes. We could see the lights up ahead, and we headed off down the path to reach it, when, luckily, somebody yelled at us and woke us up."

The crew ran into some Papuans chopping wood. "They didn't seem threatening," said Munroe, "but I carried my .45 the whole time." In fact, the Papuans were friendly. They took the airmen to their village for the night, then put them in outrigger canoes and took them downriver to the coast, where they were handed over to an Australian resident magistrate. By now, most of the airmen had been stricken by malaria. After they made several abortive attempts to depart, a boat finally picked them up and took them to Port Moresby, arriving there on April 1—thirty-six days after the crash. They were given a week in a hospital and returned to combat. On many of his 60 subsequent missions, the pilot, Eaton, would often fly over the wreck, and whenever he did, he would circle it and regale his new crew members with the story of how all nine men had made it back to base alive. The Swamp Ghost's formidable legend was born.

After the war, the plane slipped into an oblivion that lasted almost three decades, until the Australian soldiers spotted it in 1972. They provided the tail number to the Americans, who traced it to the lost B-17. The crew was told about the discovery. Word began to get around, especially after 1979, when Charles Darby, an early "warbird" collector and chronicler, printed dozens of photos of it in his seminal book, *Pacific Aircraft Wrecks*. Bit by bit, as the fad to recover World War II aircraft took off, trekkers made it to the site. Over time the plane was stripped of its instruments, guns and even its steering assemblies (called flight yokes), though the structure itself, resting in fresh water, remained remarkably intact.

Among others, the young Taylan was inspired by the Darby photographs. "Some people set goals to become doctors or lawyers, but when I saw those pictures, I said to myself: 'My God, this is like looking back in time. If I do anything with my life, I've got to get to this airplane.' " He managed to do just that, many times, and each trip fed his attachment to the plane. He began, as many visitors do, to feel protective about it, convinced that it should remain where it was, like a found art object that takes its meaning from its surroundings. In 2005, to support his contention that the wreck could attract adventurous souls and that this would be a boon to the nearby villages, he led 15 people on a hike to the plane. Then he joined up with a colorful local Australian expatriate, Dale McCarthy, who trucks palm oil and, on the side, runs a handsome fishermen's lodge at Bendoroda. Together they hatched a dream: bring in tourists who go in for rough travel; let them trek the Kokoda, fish for black bass at Bendoroda and hike through the swamp to lay eyes on one of the most famous war relics in all the Pacific.

"The plane would bring tourists," says Augustin Begasi, who tried to halt its removal. "But now there is nothing."

MEANWHILE, Alfred Hagen had set his sights on the Swamp Ghost. A 49-year-old aviator and commercial builder from Bucks County, he describes himself as "a carpenter from Pennsylvania with grandiose delusions." For more than a decade he has been plying the jungles of PNG in search of downed aircraft. His consuming preoccupation began in 1995 with a mission: to locate the site of the B-25 crash that killed his great-uncle, Maj. William Benn, a decorated flier and squadron leader. (Benn pioneered low-altitude "skip bombing," a way of releasing a bomb so that it skips across the water to its target.) Hagen succeeded in June 1998. The wreck was 500 feet from a mountain divide. Hagen surmised that an engine had failed and that the pilot had been searching for an uncharted pass. Two years earlier, in the course of Hagen's search, something happened that fixated him on the Swamp Ghost. He spotted its tail in the grass and jotted down the

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GPS coordinates. Then his plane, which had hit the top of a coconut palm, became disabled. It barely made it over the mountains. "We flew through a pass and could see all the stars and the Southern Cross and in the distance the lights of Port Moresby. In those moments, it was the closest I came to living my uncle's experience. I felt a connection."

Over the years, Hagen has found parts of seven other World War II aircraft in PNG, including a P-47 Thunderbolt, and in so doing has helped experts identify the bones of some 18 MIA American fliers, even attending burials back home for some of them. In one controversial instance, convinced that the bureaucratic wheels of the Army's Central Identification Laboratory in Hawaii were likely to move too slowly, he took it upon himself to call a family in Massachusetts and inform them that he had found the remains of the 22-year-old pilot whose loss they had been mourning for 51 years. He acknowledges that his call was "a gross violation of protocol," for which military authorities "called me a renegade, a loose cannon and everything else," but he is not a man to shy away from a confrontation—or a challenge. "One of the extraordinary things about what I've done is I wasn't qualified to do any of it," he said. "In life you don't have to be qualified. You just have to have audacity. I have audacity."

Like many others, Hagen has fallen under the spell of the Swamp Ghost. But unlike most, he feels the need to own it. Why? "It's the holy grail of military aviation." To leave it in the swamp, he asserts, would have been "obscene," because it was slowly but surely disintegrating. Hagen's company, Aero Archaeology, obtained an export permit for the Swamp Ghost from New Guinea's National Museum and Art Gallery in November 2005 in return for $100,000.

"I said, 'We're not going to make it,' " recalls Clarence LeMieux, one of three Swamp Ghost crew men still living (above). All nine made the trek out of the jungle.

Earlier attempts to raise the plane, including one by the Travis Air Force Museum in California, which would have provided PNG's National War Museum with several restored planes, had dragged on in fruitless negotiations for more than ten years. But Hagen, armed with ample money and working with Rob Greinert, an Australian who has salvaged more than a dozen aircraft from PNG, was determined to press ahead. He assembled a crew of 43 people, including a B-17 mechanic, a specialty towing company from Penndel, Pennsylvania, and a five-man documentary film crew. The group labored for close to four weeks, raising the craft with weighted air bags, severing the wings, dismounting the four engines, removing the tail and lifting the fuselage. The operation was arduous—they had to contend with everything from crocodiles in their base camp to scorpions in their wading boots—but successful. Their Russian-built military helicopter hoisted out the various parts and placed them on the barge, waiting nearby. The left wing dropped from its sling half a mile from the site but was recovered and, according to the salvagers, suffered only minor damage. Some of the locals who worked with the salvagers—and who were paid handsomely—are content. "We heard a lot from our fathers about what it was like working with the Americans in the war," said Luke Nunisa, relaxing in the lounge of the luxurious Tufi Dive resort. "So it was a real opportunity to see them work. They treated us fairly."

But by the time the barge reached the coastal town of Lae and the plane was crated for shipping to the United States, the controversy over its removal—on New Guinea TV and in the main newspaper, the *Post-Courier*—had reached deep into the government. A special committee of Parliament found that the National Museum had no right to sell war surplus (only to document and monitor it) and insisted that the Swamp Ghost, belonging to the state, should not be permitted to leave the country. The committee said the plane was worth $3 million to $5 million and demanded that Hagen and Greinert be investigated by the Royal Papua New Guinea Constabulary for their roles in salvaging it. "The trade in war surplus materials is clearly big business," the committee concluded, and it said the museum, under "the improper influence of foreigners," had colluded in the illegal sale abroad of 89 planes or parts of planes, of which 85 ended up in the hands of private individuals, not museums.

The museum director, under pressure, asked the director of customs to hold off allowing the plane to be exported until a top government body, the National Executive Council, sorted out the mess. Hagen is sticking to his guns. His side claims that the parliamentary committee had an ax to grind and no jurisdiction in the matter. "I bought it legally, I salvaged it legally, I own it legally," he told me. "If they don't allow me to have it, how can any international corporation possibly do business with PNG?" He blames the media. "They drummed it up that I was raping New Guinea. . . . Because I'm a businessman from America, [they say] I must have been involved in corruption because

THESWAMPGHOST.COM (6); P. 85 FREDERIQUE OLIVIER; PP. 86-87 PAUL ADAMS

SOMETHING ABOUT THE SWAMP GHOST, I CAME TO LEARN, DRIVES PEOPLE AROUND THE BEND.

While the salvagers coped with crocodiles and scorpions, a Russian-made helicopter toted parts to a waiting barge.

THE WRECK WAS BARGED TO THE COAST FOR SHIPMENT TO THE U.S. THEN THE PAPUAN PARLIAMENT STEPPED IN.

Alfred Hagen's plan was to restore the Swamp Ghost (en route out of the jungle) for display. He also hoped to fly it himself.

how else would I have gotten it." Hagen has launched a lawsuit, claiming upward of $15 million in expenses and damages, according to his local attorney, Camillus Narakobi. "We insist the board of trustees of the museum clearly has authority to execute salvages of this nature," Narakobi said.

If, as seems likely, Hagen does succeed in exporting the Swamp Ghost, it's not clear what will happen to it. His original plan was to restore it and fly it himself, but this would be costly. He has been talking with the Pima Air and Space Museum in Tucson, Arizona, and would like to lease it to that institution for display if he can take it up for a spin every so often. The museum is dubious, to say the least, about such an arrangement. This model of B-17 is relatively rare, the only one equipped with a remotely operated "belly turret." (The gunner lay on the floor and used a periscope to fire the machine gun.) Meanwhile, as the lawyers and politicians argue its fate, the Swamp Ghost remains crated in Lae. Every other week or so, a new rumor emerges that it's been smuggled out of the country.

Justin Taylan, whom Hagen accuses of fanning the flames of controversy, says he's devastated that the plane was removed from the swamp. He maintains that it had achieved an "equilibrium" there that would have more or less preserved it for years.

Some months back, he chartered a boat to grab a glimpse of it on the docks. "It was sad," he said, recalling the sight of the fuselage without wings or tail. "It was like seeing a classical statue missing its arms and legs." But he took consolation in one thing: "It's a ghost, and its spirit seems only to have grown."

The only people who seem totally uninterested in the plane's future are the three surviving crew members. "After so many years and so much discussion, I've got sick and tired of talking about it," said George Munroe. "A lot of people got taken with that plane, which baffles me. I'm just not very interested. To me, it's just trivia. We certainly weren't that heroic. None of us saved a maiden in a burning building."

A WEEK AFTER returning from PNG, I encountered a ghost of my own. I came across the name of the Swamp Ghost's pilot, Fred Eaton, who died in March 1994. It had been written on June 9, 1942, in a notebook of my father's that my family kept for more than six decades. He must have run across Eaton at one of the aerodromes where he went interviewing pilots looking for human-interest stories to send to the *Times*. His handwriting was slanted and, from the looks of it, hurried. After the pilot's name he wrote simply: "brought ship down into breast high water. 2 days cutting way thru high grass." Nothing else. My father apparently moved on to interview others. What a story he missed.

The Curiosity of *Cats*

The record-breaking musical, which opened on Broadway 25 years ago, turned Andrew Lloyd Webber into a global impresario. But the smash hit underscored a conflict that dogs him to this day **BY MICHAEL WALSH**

EVEN FOR BROADWAY, it was a grand opening—and a grander gamble. As audiences poured into the Winter Garden Theatre on the evening of October 7, 1982, for the American première of Andrew Lloyd Webber's *Cats*, they knew they were getting a first look at the hot new dance musical that had swept London. Many even knew that the show was opening to the largest advance sale in Broadway history—$6.2 million. For months, they had been bombarded by publicity, with a cat's-eye logo peering out enigmatically from T-shirts, watches and billboards. "Isn't the curiosity killing you?" asked the voice-over on a television commercial before the show opened. And the answer was yes.

Still, they had no idea that the show they were about to see had already saved Lloyd Webber from financial peril and was about to transform him into the laird of a theatrical realm that, at its height, commanded stages from London to New York to Hamburg to Vienna to Tokyo. By the time *Cats* closed, on September 10, 2000, after 13 previews and 7,485 performances, the "megamusical" had been born and Andrew Lloyd Webber's domain had become the latter-day equivalent of the old British Empire, upon which the sun never set.

Twenty-five years later, the miracle of *Cats* continues to resound. On its propellant, Lloyd Webber became the first composer ever to have three shows running simultaneously in the West End and on Broadway, a feat he accomplished twice. Knighted in 1992, he was given an honorary life peerage five years later as the Right Honourable the Baron Lloyd-Webber of Sydmonton Court, his estate about 90 minutes west of London. In personal wealth, he has vastly eclipsed his boyhood idol, Richard Rodgers, with a fortune estimated at more than a billion dollars, homes in London and Sydmonton, a castle and horse farm in Ireland, an apartment in the Trump Tower in New York City and a villa in Majorca.

(A note about the hyphen: as a young man, Lloyd Webber's father, William, added the "Lloyd" to his name to distinguish himself from W. G. Webber, a rival organist at the Royal College of Music. And while the young Andrew occasionally hyphenated his name in correspondence, his baronial title is the only place it is hyphenated today, as British titular custom mandates a hyphen when there is a double surname.)

The day of the blockbuster megamusical—defined by Jessica Sternfeld in her excellent study, *The Megamusical*, to include such larger-than-life shows as Lloyd Webber's *Cats*, *Starlight Express* and *The Phantom of the Opera*; Boublil and Schönberg's *Les Misérables* and

"I can give you the objections, and they sound a convincing lot," Lloyd Webber (opposite, in 2007) said of the prospects for *Cats*. But the show delighted audiences in London, on Broadway and beyond (above, "felines" from a Paris production in 1989).

MICHELINE PELLETIER / SYGMA / CORBIS; P. 89 FELIX CLAY / EYEVINE

Stages in Lloyd Webber's career (from top): *Jesus Christ Superstar* (1970) and *Evita* (1976) began life as rock albums. *Cats* (1981) had the longest run in Broadway history, until it was surpassed by *The Phantom of the Opera* (1986) in 2006—an event marked (above) by a symbolic passing of the baton from a character in the former show to one in the latter. The disappointing *Aspects of Love* (1989) and *Whistle Down the Wind* (1996) bracketed Lloyd Webber's most recent hit, *Sunset Boulevard* (1993).

Miss Saigon; and *Chess*, by Benny Andersson and Björn Ulvaeus of ABBA, and Tim Rice—may at last be over, but Lloyd Webber's transmogrification from skinny, long-haired counterculture icon to well-fed and tonsured Tory peer personifies the triumph of the baby boomer as few other careers do.

But as the pussycats frolicked on that autumn evening in New York, most of this was still in the future. No one could have predicted that *Cats*, which had begun life very modestly as a song cycle performed in the composer's private theater in a converted chapel at Sydmonton, would prove to be the longest-running show in Broadway history (later surpassed by *Phantom*). Nor could anyone have foreseen that it would represent such a conflict between art and commerce—a Hobson's choice that has bedeviled Lloyd Webber ever since.

THE SHOW'S FATE was far from assured. A dance musical based on minor poems by T. S. Eliot? And what did the British know about Broadway-style dancing? That was America's preserve, lorded over by Gower Champion and Bob Fosse and Jerome Robbins. As for Lloyd Webber, he was best known as the other half of the Tim Rice partnership. They had had a hit record—and a Broadway flop—more than a decade earlier with *Jesus Christ Superstar* and a *succès d'estime*, under the steady hand of Hal Prince, with *Evita*, which also had started life as a rock album.

So the prospects for *Cats* were not great, as Lloyd Webber knew. "I can give you the objections, and they sound a convincing lot," he would recall. "Andrew Lloyd Webber without Robert Stigwood [the flamboyant impresario who had produced *Superstar*], without Tim Rice; working with a dead poet; with a whole load of songs about cats; asking us to believe that people dressed up as cats are going to work; working with Trevor Nunn from the Royal Shakespeare Company, who's never done a musical in his life; working in the New London, the theater with the worst track record in London; asking us to believe that 20 English people can do a dance show when England had never been able to put together any kind of fashionable dance entertainment before. It was just a recipe for disaster. But we knew in the rehearsal room that even if we lost everything, we'd attempted something that hadn't been done before."

In 1980, the year before *Cats* opened in London, Lloyd Webber had mortgaged his beloved Sydmonton Court for the second time (he had bought it with the fruits of the *Superstar* album's success) to raise nearly $175,000 for his own show. *Cats*' young producer, Cameron Mackintosh, needed $1.16 million to stage it, but no one with means wanted to back it. So Mackintosh advertised in the financial press, soliciting small investments—750 pounds (almost $1,750) was the minimum. In the end, 220 people put up money for the

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MICHAEL WALSH *is the author of* Andrew Lloyd Webber: His Life and Works, A Critical Biography *(1989).*

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show, including a man who wagered his life's savings of just over $11,000. They all profited handsomely, Lloyd Webber most of all.

Going into the London tryouts, however, *Cats* lacked the crucial ingredient of all successful musicals: a hit song. Mackintosh needed it. Nunn, the director, demanded it for Grizabella, the bedraggled Mary Magdalene cat who achieves her apotheosis as she ascends to the Heaviside Layer at the show's climax. It was up to Lloyd Webber, the composer, to write, borrow or steal it—even if only from himself. Thus was born "Memory."

COMPOSERS NEVER THROW anything worthwhile away, so even when a musical dies stillborn, parts of it find their way into other shows. (Rossini liked his overture for *La gazza ladra* so much he used it in at least two other operas.) Years before, Lloyd Webber had toyed with writing an opera about the competition between Puccini and Ruggero Leoncavallo, who wrote different versions of *La Bohème*. (Puccini's has held the stage since its première, in 1896; Leoncavallo's, which premièred the following year, has all but vanished, and its composer's reputation today depends almost solely on his one-act opera, *Pagliacci*, most often seen with Pietro Mascagni's *Cavalleria Rusticana*—the "ham 'n' eggs" of double-bill legend.) Nothing ever came of Lloyd Webber's *Bohème* project, however, and the music he had sketched for it wound up in a bottom drawer.

Now it came out, in the form of the tune for "Memory." The first person Lloyd Webber played it for was his father, Bill, a noted church organist and minor British composer of the mid-20th century. Lloyd Webber waited anxiously for his father's judgment: "Did I steal it?" he inquired, fearful that the catchy melody, underpinned by a distinctive, falling-thirds harmony, might have originated in some other composer's *oeuvre*, half-remembered and now, however unwittingly, regurgitated.

Bill just shook his head and said, "It's going to be worth two million dollars to you, you fool." Shortly thereafter, Lloyd Webber played it for Nunn, who asked what it was. "It's a very extravagant, emotional theme," Lloyd Webber told him. "Make it more emotional, more extravagant, and we'll have it in *Cats*," said Nunn.

And so they did. When Lloyd Webber played it for the cast, Nunn turned to the performers and said, "What is the date? The hour? Remember, because you have just heard a smash hit by Lloyd Webber."

In a poignant example of what-might-have-been, Tim Rice took a crack at writing the words, in part because his mistress, Elaine Paige, had suddenly replaced Judi Dench as Grizabella, and in fact his words were used for a long stretch in rehearsal. (Although married, Rice was carrying on a very public affair with Paige.) But in the end his lyric was replaced by one written by Nunn (who used Eliot's "Rhapsody on a Windy Night" as his starting point), and Rice had to watch millions in publishing royalties slip away. The rejection only further soured Rice's already precarious relationship with his former partner.

And what of the melody itself? A standard criticism of Lloyd Webber, especially from drama critics, is that his music is derivative—a gloss on his betters when it is not an outright theft. Since most drama critics are, to put it charitably, nonmusical, this is an odd criticism, and one that smacks of received opinion: "Puccini-esque" is a term one encounters often in criticism of Lloyd Webber's music, but aside from "Growltiger's Last Stand," which parodies the first-act love duet from *Madama Butterfly*, there is precious little Puccini in *Cats*.

Indeed, Lloyd Webber has always been more highly regarded by music critics, who not only know the repertoire he is alleged to be pilfering, but also can place him correctly in a dramatic-operatic context. Far from being the love child of Puccini and Barry Manilow, as some would have it, Lloyd Webber is more correctly seen as a kind of latter-day Giacomo Meyerbeer, the king of the Paris Opera in the mid-19th century, whose name was synonymous with spectacle. But a little ignorance goes a long way, and with "Memory" the notion that Lloyd Webber is a secondhand pastiche artist—if not an outright plagiarist—got its start.

This is partly Lloyd Webber's own fault. His melodies sometimes skirt perilously close to earlier classical and Broadway sources, and while the showbiz axiom that "good writers borrow, great writers steal" may well apply, it is also true that some of his tunes, both large and small, evoke earlier sources. As drama critic John Simon wrote after the première of *Phantom*: "It's not so much that Lloyd Webber lacks an ear for melody as that he has too much of a one for other people's melodies. . . . I predict that

Lloyd Webber's collaboration with Tim Rice (left, with the composer in Manhattan in 1973) included *Jesus Christ Superstar* and *Evita*, but their relationship foundered after Rice's lyric for "Memory" in *Cats* was replaced by one written by Trevor Nunn.

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Gershwin and Rodgers, let alone Puccini and Ravel (another of his magnets), have nothing to fear from him." Other critics have been less subtle: "Webber's music isn't so painful to hear, if you don't mind its being so soiled from previous use," wrote Michael Feingold of the *Village Voice*.

So, are the critics right? Is Lloyd Webber a kind of musical ragpicker, offering secondhand tunes at first-rate prices? Certainly, there is more than enough aural evidence to support such a claim. The melody in *The Phantom of the Opera* at the words, "And in his eyes/all the sadness of the world," is closely related to Liu's suicide music in the last act of Puccini's *Turandot*. (Yes, this bit is "Puccini-esque.") The opening theme of the revised *Joseph and the Amazing Technicolor Dreamcoat* bears a striking resemblance to the piano tune Magnolia is practicing aboard the *Cotton Blossom* in Jerome Kern's *Show Boat*. The thundering chromatic chords that open *Phantom* are the spiritual heirs of the first notes of Ralph Vaughan Williams' *London Symphony*.

> To attribute the staying power of *Cats* to its junkyard setting is to miss the point.

But it's far too facile to dismiss Lloyd Webber as an imitator. Plagiarism entails much more than mere correspondence of notes; the test of actual theft involves whether the same sequence of notes (there are, after all, only 12 of them) functions in the same way as in the source material. That is to say, does it have the same dramatic and emotional function?

Neither music nor melodies arise or exist in a vacuum. Irving Berlin was accused by none other than Scott Joplin of having stolen the theme of "Alexander's Ragtime Band" from the final number of Joplin's opera, *Treemonisha*, the deeply moving "A Real Slow Drag." (Berlin was probably innocent.) Early Richard Rodgers owes a clear debt to ragtime, as does the music of Harry Warren, the great Warner Bros. composer and songwriter. Lloyd Webber's case is even more complicated.

From his father, he absorbed the whole spectrum of British art music, from Thomas Tallis to Sir Edward Elgar and Ralph Vaughan Williams. His younger brother, Julian, has had a successful career as a classical cellist. And Andrew's own predilections led him, after a life-changing exposure to the movie *South Pacific* in his youth, to Broadway. Coming of age in the 1960s (he was born on March 22, 1948), Lloyd Webber drank deeply at the trough of rock 'n' roll, internalizing its harmonies and rhythms and spitting them back out again in *Jesus Christ Superstar*. Lloyd Webber is a musical sponge, promiscuously soaking up influences that include not only music, but Victorian art and architecture as well. Politically conservative, he's the quintessential Tory, adrift in a tsunami of cultural and demographic change, desperately clinging to what made Britain great.

But does that make him a plagiarist? Absolutely not.

"MEMORY" TURNED OUT to be a big hit and a best-selling single for Barbra Streisand. It is, however, anomalous among Lloyd Webber's output for the simple reason that Lloyd Webber does not write songs, he writes shows. Of course, the shows are made up of individual numbers, but the very scarcity of "hit" songs from Lloyd Webber productions—quick, name another besides "Don't Cry for Me, Argentina"—sets his shows apart from those of Irving Berlin and Rodgers and Hammerstein. He has long (since *Superstar*, in fact) protested that he doesn't write musicals, he writes operas, and it is long past time that critics take him at his word.

Through the years, Lloyd Webber's most prominent American critic and chief antagonist has been Frank Rich, the former drama critic of the *New York Times*. In his time on the drama desk, the "Butcher of Broadway," as he was known, was notorious for working political references into his reviews; today, he works showbiz references into his weekly political column. Like most drama critics, Rich had minimal qualifications to pronounce judgment on musical matters, which did not stop him from trying. (On *Aspects of Love*: "[T]his time the composer's usual Puccini-isms have been supplanted by a naked Sondheim envy.") In time, relations between Lloyd Webber and Rich grew so acrimonious that when the composer acquired a racehorse, he named the beast after the scribe. "That way, if it falls, we won't mind," explained Lady Lloyd-Webber.

So it may come as a surprise that Rich gave *Cats*, on balance, a favorable notice, one that had everything to do with the show's theatrical values and nothing to do with its music: "[*Cats*] transports its audience into a complete fantasy world that could only exist in the theater and yet, these days, only rarely does. Whatever the other failings and excesses, even banalities, of *Cats*, it believes in purely theatrical magic, and on that faith it unquestionably delivers."

Still, to attribute the initial success and staying power of *Cats* to its junkyard setting and levitating tire is to miss the point. Audiences were thrilled by the crashing chandelier that ends the first act of *Phantom*, but no one hums a crashing chandelier or buys an original-cast album because of it. Lloyd Webber's music stays in the popular imagination in spite of its origins in megamusicals, not because of them. As noted, *Superstar* and *Evita* both began life as rock double albums (as did Rice's *Chess*), and in that form they will outlive their theatrical incarnations and "original-cast" albums.

But no one stays on top forever, and it's entirely possible that Lloyd Webber's long stint at the heights of the West End and Broadway is over. His last international hit—*Sunset Boulevard* (1993)—was preceded by the relative failure of *Aspects of Love* (musically, his finest work) and followed by a

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string of flops, including *Whistle Down the Wind*, *The Beautiful Game* (neither of which made it to Broadway) and *The Woman in White*. Even *Sunset*, which opened with the largest advance sale in Broadway history and won seven Tony Awards, failed to recoup its investment.

Which naturally gives rise to the question: Is he finished?

It seems all but certain that the megamusical is finished. Enormously expensive to mount, the genre had a great run lasting nearly a quarter of a century, but despite the recent revival of *Les Miz*, it does not appear to be coming back anytime soon. Boublil and Schönberg's more recent works—*Martin Guerre* and *The Pirate Queen*—have not replicated the success of their earlier works. And after a brief flurry of interest, the shows of Frank Wildhorn (*Jekyll & Hyde, The Scarlet Pimpernel*), sometimes referred to as "Lloyd Webber Lite," have faded from the scene. Although reports of the death of Broadway inevitably turn out to be exaggerated, its creative energy seems to have departed once again, leaving a trail of revivals—not only *Les Miz*, but also *Grease*, Sondheim's *Company*, Kander and Ebb's *Chicago* and Marvin Hamlisch's *A Chorus Line*—and such cobbled-together shows as *Mamma Mia!* (based on ABBA songs from the 1960s and '70s) and *Jersey Boys* (Frankie Valli and the Four Seasons), designed to appeal to aging boomers eager to relive the music of their youth. The only spiritual heir of Lloyd Webber still chugging along is the Walt Disney Company, whose stage spectaculars *Tarzan*, *The Lion King* and *Beauty and the Beast* owe much to Lloyd Webber's trailblazing.

ANDREW LLOYD WEBBER will turn 60 in March. After two unsuccessful marriages—to Sarah Tudor Hugill, with whom he had two children, Nicholas and Imogen, and Sarah Brightman, the original Christine Daaé of *Phantom*, who, post-parting, has gone on to a career as a pop diva—the composer has found stability and happiness in his 1991 marriage to the former Madeleine Gurdon, an equestrienne who has borne him three children, Alastair, William and Isabella. Unlike the reclusive Sarah I or the flamboyant Sarah II, the no-nonsense Lady Lloyd-Webber of Sydmonton is at once lover, wife, helpmeet and business partner. Her husband's former indulgences, especially in fine wines, are largely a thing of the past, and his old crew of bibulous hangers-on has been replaced by savvy business folk and crisp personal assistants who administer the Empire from the offices of Lloyd Webber's company, the Really Useful Group, on London's Tower Street. It's quite possible that the old hunger has long since been assuaged, the creative fires banked.

And yet . . . for years Lloyd Webber has been talking about forsaking mere commercial considerations and embracing art as his one true mistress. This usually occasions a round of sniggers from those who understand neither the man nor the music, but there can be no doubt

Lloyd Webber's marriages to Sarah Tudor Hugill (above, c. 1980) and Sarah Brightman (right, as the original Christine Daaé in *Phantom* in 1988) ended in divorce. He has been happily married to the former Madeleine Gurdon (below, with three of his five children in 2004) since 1991.

The success of the rock album *Jesus Christ Superstar* allowed Lloyd Webber to purchase Sydmonton Court (below) in 1973. But he had to mortgage the 5,000-acre estate to get *Cats* off the ground.

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that, if he put his mind to it, Andrew Lloyd Webber could yet write a show, or an opera, of undeniable artistic worth.

In a sense, he already has. Those lucky enough to be present at Sydmonton to hear the first run-through of *Aspects of Love* in July 1988 will never forget the sheer, overwhelming beauty of the music (played on two pianos); there, at its very first performance, the show had already found its ideal form. Onstage, however, the show simply did not work. This was partly the fault of the set designer, the late Maria Björnson, whose brilliant aesthetic for *Phantom* here seemed leaden, earthbound, depressing. It was also partly the fault of the director, Trevor Nunn, who saw David Garnett's Bloomsbury-era novella of sexual high jinks as an opportunity for social commentary. It was also partly Lloyd Webber's fault; given the opportunity to finally come out from behind the *Phantom*'s mask and show his face as a serious artist, he compromised his musical vision by tarting up the score with false climaxes and showy endings.

He may yet write a show, or even an opera, of undeniable artistic merit. In a sense, he already has.

Andrew Lloyd Webber approaches his 60th birthday as something of an anomalous figure. Successful by any conventional measure, wealthy, the bearer of his country's highest honors, he has become a kind of dilettante in his own profession, conducting his own star searches on British television ("How Do You Solve a Problem like Maria?" and "Any Dream Will Do") for unknowns to cast as leads in Lloyd Webber-produced revivals of *The Sound of Music* and *Joseph*. Lloyd Webber even popped up on American television last winter as a judge on the *Grease: You're the One That I Want* talent search, an experience that so frustrated—or inspired—him that in July, he announced he was signing with the Hollywood talent agency William Morris Associates to look for an American television network deal for a star search. Between the House of Lords and appearing at the likes of a memorial concert for Princess Diana in July, he doesn't ever have to write another note.

Still, the young boy Bill Lloyd Webber dubbed "Bumper" for his restless—and occasionally reckless—curiosity is likely to reassert himself, as Lloyd Webber chases the one thing that's always eluded him: critical respect. For a time, the odds-on favorite for his next project was Mikhail Bulgakov's Soviet-era allegory, *The Master and Margarita*, a cult work much admired by Secretary of State Condoleezza Rice, who has read it in the original Russian as well as in English. Featuring Satan as a major character, the novel circulated underground in the former Soviet Union and was not published until 1966, more than a quarter of a century after Bulgakov's death.

The fantastic source material and the religious/allegorical elements might have pointed the way to a fresh beginning, or at least a return to the spirit of *Superstar* and *Evita*. So what if the obscure Russian novel wasn't especially commercial? For years, Lloyd Webber has said that he harbors a desire to compose a genuine opera, or write a book about Victorian architecture—to get as far away as possible from the megamusical and reconnect with his roots. A musical that featured a suave, disguised Satan arguing with humans about whether either he or Jesus Christ ever existed would bring Lloyd Webber full circle, for redemption has always figured in his works, from Jesus to Evita to Grizabella to the little-engine-that-could in *Starlight Express* to the *Phantom*'s redemption-by-love at Christine's kiss.

Instead, his next show is likely to be *The Phantom in Manhattan*, based on Frederick Forsyth's 1999 novel of the same name, which was itself written as a sequel to Lloyd Webber's show, not to Gaston Leroux's source novel. It's already off to a rough start: according to a report in the *Daily Mail* in June, Lloyd Webber's cat, Otto, managed to jump inside the composer's digital piano and destroy the entire score. (Yes, his cat.)

Still, there's always the bottom drawer; the original *Phantom* was at first intended to be a pastiche, and was later cobbled together from multiple leftovers. It would be regrettable, but not shocking, were Lloyd Webber to finally succumb to his critics' worst imaginings and, in the end, turn out to be a pastiche artist after all.

Far better, though, were he to rise to the expectation and create something entirely new, fresh and vivid. *The Master and Margarita* would seem to be a far greater and more exciting challenge than a *Phantom* rehash. Long freed of financial restraints, he has long had that option, though he hasn't chosen to exercise it.

But surely a show that pits Jesus against the Devil, art against commerce, opera against musical, is where Andrew Lloyd Webber has been heading all his life. Even if he has yet to realize it.

For years, Lloyd Webber has talked about abandoning commerce and embracing art. Still, he appeared as a judge on the TV talent search *Grease: You're the One That I Want* (above, in 2006) and then announced that he was signing a Hollywood agent.

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BACK TO THE

FIGURE

Recognizable forms are showing up in the works of a new wave of contemporary painters

BY PAUL TRACHTMAN

THE DEATH OF PAINTING was first predicted in the middle of the 19th century, when the advent of photography seemed to snatch reality out of the painter's hand. "If photography is allowed to stand in for art in some of its functions," wrote French poet and art critic Charles Baudelaire in 1859, "it will soon supplant or corrupt it completely." Artists have been trying to come to terms with photography's implications ever since.

Impressionists such as Monet and Renoir, rejecting the static, mechanical imagery of photographs (right, a circa 1860s albumen print by an unknown photographer) as well as the stale academic painting of their time, set out to paint their own impressions of how the eye perceives light and atmosphere in nature. Some of their contemporaries, including Degas and Toulouse-Lautrec, took a different tack. They began using photographs for inspiration—cropping their images as the camera might, for example, and introducing distortions of perspective based on the camera's lens.

Then, one hundred years ago, Matisse and Picasso made the radical paintings that would define a new era of modern art. Matisse disfigured the figure with his bulging *Blue Nude* in 1907, painting from a photograph to free his imagination and break habits formed by drawing from life. Picasso also used photographs to paint his 1907 *Les Demoiselles d'Avignon*, with each figure seeming like a multiple ex-

Painter Peter Doig, who turns to photographs for inspiration, combines representation with abstraction in such works as *Paragon*, 2006 (left).

posure, seen from different angles at the same time—a decisive step into Cubism.

As the 20th century progressed, painters such as Wassily Kandinsky and Jackson Pollock abandoned the concept of art as representation altogether, producing canvases that contained no recognizable objects at all. In their "abstract" works, the paint itself became the subject. By the 1960s, conceptual artists—inspired by Marcel Duchamp and other Dadaists of the 1920s—adopted the view that art should aim at the mind, not the eye, turning out paintings in which the idea behind the work was more important than the work itself. With a few obvious exceptions—Pop Art, Photo Realism and artists such as David Hockney—representational or figurative art was largely considered a thing of the past by the end of the 20th century. But in recent years, a number of contemporary painters have begun reaching back to the roots of modern art to find new modes of expression. They are mixing the human figure and other recognizable forms with elements of abstraction and ambiguous narrative in ways not seen before.

"The excitement around my profession right now is tremendous," says Joachim Pissarro, a curator of painting and drawing at New York's Museum of Modern Art. "Thirty years ago, there was all this talk of the end of painting. Today nobody cares about that." For the young generation, he says, "the polarization between abstraction and representation that existed in the last half of the 20th century is just meaningless. What we're seeing now is very interesting. And totally new."

Scattered from Brooklyn to Trinidad to Leipzig, Germany, the artists represented in these pages are renewing "a belief in painting," says Laura Hoptman, senior curator at New York City's New Museum of Contemporary Art.

Writer and painter **PAUL TRACHTMAN** *lives in New Mexico. His article about the Dadaists ran in the May 2006* SMITHSONIAN.

PETER DOIG

"WHEN PEOPLE STARTED TO become interested in my work in the late 1980s, painting was completely off the agenda," says Peter Doig, a 49-year-old Scot living in Trinidad. "What the galleries considered cutting edge was all conceptual—painting about painting, art that said something about the way it is made. I deliberately worked against that. For me, once you're a painter, you're constantly compelled to look at the world as a potential subject for painting. And that goes from seeing something on the street, to seeing something in a movie, in a magazine, everything really."

Doig's studio, in a renovated rum distillery in Trinidad's capital city, Port of Spain, is full of large canvases depicting junglelike landscapes, paint-smeared rivers and ambiguous figures. When he left London to move to Trinidad in 2003, many of his friends called it "doing a Gauguin," after the French artist Paul Gauguin, who moved to Tahiti in 1891 to become one with nature. Doig's style is sometimes compared to Gauguin's, but his approach to painting is quite different. His method hinges on a kind of information processing that often starts with a photograph, he says, because painting from photographs distances him from what is real or true. "Why does a painting have to be truthful?" he asks.

Doig has made several paintings from an old postcard he bought in a London junk shop that depicts a river scene in India. "When I paint directly from nature," he says, "I get too caught up in trying to get it right. Using photography, or a postcard, allows me just to take what I want and leave the rest out. I made a photograph of the tiny guru in the postcard, and took another photo of that, and I blew it up so it became a blurry blob, and I painted from that, and he became a sort of bearded man, something mysterious and black. I don't know if he's a religious figure, or a fanatic, but there's something kind of spiritual about him."

He points to a 9-by-12-foot canvas of a sketchy figure climbing a palm tree, hugging the trunk and peering out from an abstract void of brushstrokes, drips and cracks. "Those drips and cracks are the kinds of beautiful things in painting that are unique," he says. "You take chances and they're given to you, but I'd hate them to become a mannerism or gimmick." It was the figure, however, that most struck SITE Santa Fe director Laura Heon when the painting was shown at the museum's 2006 Biennial. "In a sense, it's a return to humanism," she says. "There's something very generous about making a picture of a human being."

A major retrospective of Doig's work will open at the Tate Modern in London in February.

Doig (left, at his studio in Port of Spain, Trinidad) was born in Scotland and lived in London before moving to Trinidad in 2003. He likes to paint from photographs, he says, because it distances him from reality.

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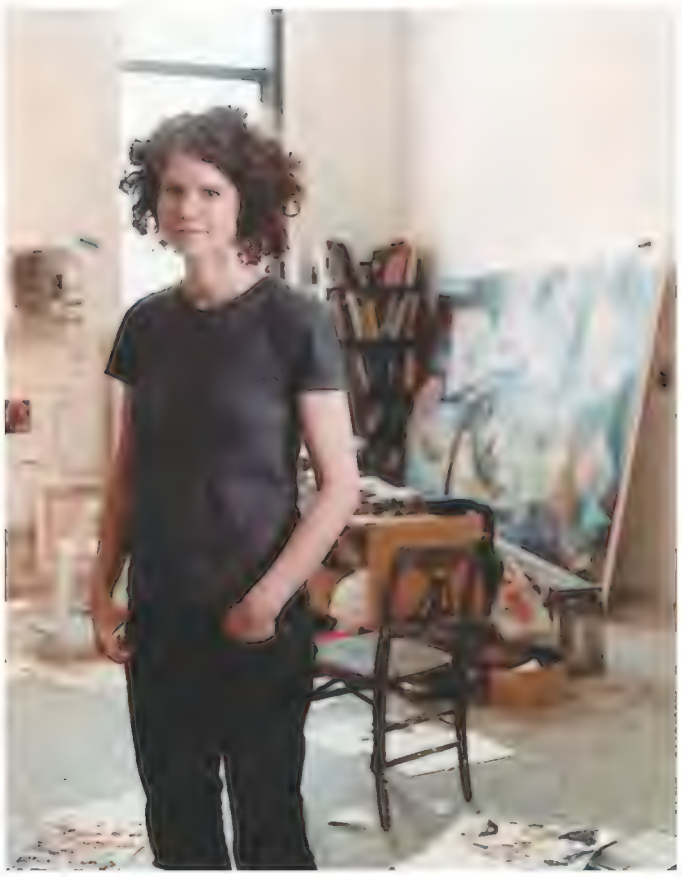

In *How we would drive* (below), artist Dana Schutz (above, in her Brooklyn studio) gives a mundane moment an unsettling spin. The featureless couple appear distorted, malleable. "The way I'm thinking about them," she says, "is that in the future, if you were looking back at us, what features would remain?"

DANA SCHUTZ

IN DANA SCHUTZ'S PAINTINGS, the fake and the real are hard to tell apart. "I know my images are constructed, but I believe in them when I'm painting," she says in her studio in an old industrial building turned artists' co-op in Brooklyn. Schutz, 30, likes to create figures and put them into different scenarios in a series of paintings, where they seem to take on a life of their own. One such series is of figures she calls "self-eaters"—a stripped-down form of people who survive by feeding on parts of their own bodies and then reconstructing themselves. The paintings, with their fantastic imagery and what she calls her "extroverted colors"—hot pinks and reds, electric purples and jungle greens—have been praised as a new Expressionism, and it is easy to interpret them in terms of social ills—from anorexic models to ravenous consumerism—or even as glimpses into the artist's psyche. But Schutz disagrees.

"I'm not an Expressionist," she protests. "These paintings are not about me expressing how I feel at all." The self-eaters, she says, "are a pictorial solution; you can take them apart and put them together again. It's like they just became material."

But Schutz does say that her paintings are sometimes inspired by what she sees on the Internet or is thinking about at the time. "I want these paintings to start somewhere in the public imagination, where people feel like they could know that story, like plastic surgery or production-consumption, or the ways we make alternative histories for ourselves," she says. "More and more I feel like the most radical thing art can do is give someone an experience they feel is unfamiliar in some way."

For Schutz, there's no hard line between abstract and figurative painting. "I don't think of them as being something separate." In one new painting (left) of a man and woman driving, the figures in the car seem almost plastic, as if they're melting in a hot Hawaiian landscape. "The way I'm thinking about them," she says, "is that in the future, if you were looking back at us, what features would remain, in a slightly distorted or generalized way?

"Maybe we're refiguring the figure," she continues. "Making paintings about painting just sounds crazy. All that talk about the paint. I think artists now want to be making meaning and having an effect. It's very different from the 20th century."

An exhibition of Schutz's work opens in November at the Contemporary Fine Arts Gallery in Berlin, Germany.

ERICA FREUDENSTEIN; ZACH FEUER GALLERY

ZACH FEUER GALLERY

Schutz's "self-eater" paintings (*Devourer*, 2004) are often called Expressionist, but, Schutz says, they "are not about me expressing how I feel at all." The self-eaters "are a pictorial solution," she explains. "It's like they just became material."

Drawing inspiration from late-19th-century French history painting, Barnaby Furnas mixes figurative elements with techniques adapted from Abstract Expressionism and from graffiti in works such as *Untitled (Consolation)*, 2004, from his Civil War series.

MARIANNE BOESKY GALLERY, NEW YORK

Furnas, above, in his Brooklyn studio in 2006 with *Red Sea (Parting II)*, makes no distinction between painting abstractly and painting recognizable forms and figures. For *Red Sea*—one of his "big blood floods"—he poured paint directly on the canvas.

BARNABY FURNAS

BARNABY FURNAS, like fellow Columbia University art school graduate Dana Schutz, has set up his studio in a converted industrial loft in Brooklyn. His paintings, inspired by late-19th-century French history painting, combine figurative elements with techniques he's derived from graffiti and Abstract Expressionism.

"As a teenager growing up in inner-city Philadelphia, I was a graffiti writer first," he says. "I got into all sorts of trouble, got arrested, but I always had one foot in art class." Eventually, a friend's father took him to some art galleries in New York City. "That's really the only way I would have even known that the art world ever existed," he says.

Furnas, 34, paints his canvases flat on the floor, as Jackson Pollock did. But instead of dripping oil paint à la Pollock, he creates puddles of water-based paint that he piles one on top of the other to create form. For a series about the Civil War, he filled a syringe with red acrylic paint that he squirted over his canvases to represent blood. "Oils would never dry in time for the way I'm using paint," he says, "flat on the ground, in puddles. A lot of that goes back to graffiti. One of the things I liked about graffiti is that it deliberately misuses material. You could take spray-can caps off of one aerosol, say a countertop cleaner, for instance, and put it on a paint spray can and get a completely different effect from the nozzle. . . . I've never bothered with easels or brushes even. I have a huge collection of spray-can caps, the way I imagine some oil painters have brushes. In my work, there's a sort of willful mixture of what's in the hardware store and what's in the art store."

In art school at Columbia, Furnas found himself rebelling against an older generation of teachers who were, he says, "conceptual and postmodern artists, almost no painters." He saw painting as an act of self-expression that was out of vogue. He also wanted his work to be accessible to viewers without the need for academics to interpret it. "I didn't want these people in black suits talking about my work," he says. "I didn't want an intermediary." He decided to "go back to the seeds of Modernism," he says, "to Courbet and Géricault and Manet, to late-19th-century French history painting. I was able to reinvestigate the genre and come at it in a different way. So I've become this sort of Modernist thrift-store shopper!"

An exhibition of Furnas' work is scheduled for spring at the Stuart Shave/Modern Art gallery in London.

JASON SCHMIDT

German artist Neo Rauch painted 11 mural-size canvases, including *Der nächste Zug (The Next Move/The Next Draw)*, specifically for his current show at the Metropolitan Museum of Art. His surreal, ambiguous scenes evoke a sense of nostalgia, mystery and unease.

NEO RAUCH

IN LEIPZIG, 47-year-old German artist Neo Rauch is influencing a generation of post-cold-war painters with ambiguous paintings that mix realism with fantasy, the ordinary with the bizarre. Drawing on the graphic styles of Eastern Bloc comics and commercial art, the Social Realism of communist East Germany, his own dream imagery and elements of his urban landscape, Rauch paints the kind of figures you might find in propaganda posters, but he sets them in scenes that, he says, are "confusingly plausible"—at once familiar and strange.

Rauch describes his paintings as allegories with a personal iconography that remains private. He recently told an interviewer for New York's Metropolitan Museum of Art that his decisions as a painter may defy reason—even his own. But what he includes in a painting has its own reality, he says, because "despite all the desire for interpretation, painting should retain the privilege of placing what cannot be verbalized into an obvious structure." Rauch describes his process of making a painting as a struggle to balance what's recognizable with what's inexplicable. "For me, he has said, "painting means the continuation of a dream with other means."

Rauch (in his studio in Leipzig) describes the process of creating his allegorical canvases as a struggle to balance what's recognizable with what's inexplicable.

An exhibition of Rauch's work is currently on view at the Metropolitan Museum of Art in New York City (through Oct. 14).

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"I was attracted to the image as a stereotype of a perfect suburban couple," says Katherine Lee (below, in her New Mexico studio) of *Untitled Love*, "but the woman's look hints of danger."

KATHERINE LEE

IN AN OLD ARMY BARRACKS made into artists' studios at the College of Santa Fe, Katherine Lee, 22, wonders how her wired generation will look at art. "We read so many instant visual messages these days," she says, "like commercials—read it and get it—and I want a painting to be interesting longer than a commercial break. I think there is a fear of narrative, and it comes from the idea of 'getting it.' People are so used to advertising that they want what they see in a painting to be pre-thought by someone else. But advertising does such a good job that maybe you have to find a new strategy."

A mysterious, almost black landscape with a patch of distant light is pinned to Lee's studio wall. It has the moody atmosphere and depth of a 19th-century landscape, but Lee painted it from several photographs using a mixture of graphite, oils and cans of spray paint. The dark foliage suggests a jungle or forest, and there's something that looks like a red umbrella in the midst of it all. But there are no people. It's hard to know anything about the scene, which is just what she wants. "That umbrella in the forest suggests *something* is going on," she says. "I like the idea that everything acts as potential content. I really don't think about what it means when I'm making it, because I know it's going to make its own meaning."

When she does paint human figures, as in an oil and graphite image of a romantic couple she calls *Untitled Love* (above), Lee wants the paint to interest a viewer as much as the image. "It's not exactly figurative painting," she says, "because it's not really about these people. When I started the painting, it really was just about the figure, but pretty soon that seemed too flat. I got really frustrated and sort of destroyed most of the painting, and then it was a lot better. I took a brush and just violently blurred everything. By abstracting everything to such an extent, the painting becomes open, it gains a lot of potential content as opposed to explicitly explaining itself."

Katherine Lee's paintings will be on view in a thesis show at the Fine Arts Gallery of the College of Santa Fe in May.

PRIVATE COLLECTION; CHRIS CORRIE

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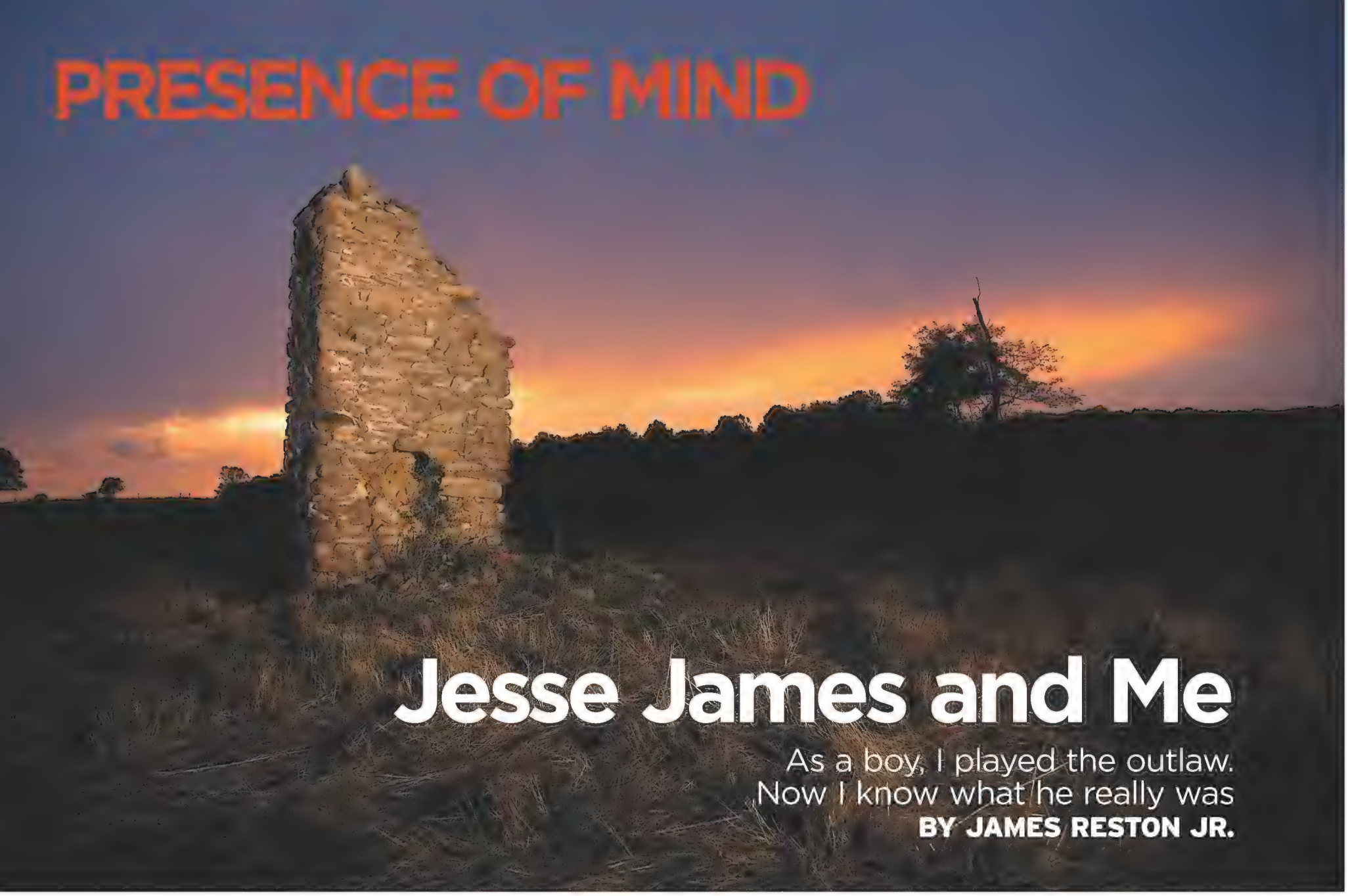

Jesse James and Me

As a boy, I played the outlaw. Now I know what he really was

BY JAMES RESTON JR.

IN AN OPEN FIELD down the road from our Virginia cabin, a single stone chimney stands like an aging sentry amid grazing Black Angus cattle. Since my parents bought the 11-acre retreat in 1948—called Fiery Run for the rainwater that rushes down from Rattlesnake Mountain to the north—I lived in certainty about what that chimney signified. The citation of the old Virginia Historic Landmarks Commission that rests on our cabin mantel confirmed it: this was the house where Robert Ford, Jesse James' confederate and assassin, grew up in the 1860s. As a boy, I acted out parts of Jesse's legend on our lawn with glee.

In the mid-19th century, the community gristmill was on our property. The solid, three-story miller's house stands there still, and the mill, though now a ruin, was still standing when I was recuperating at the cabin after being hit by a Washington, D.C. bus in 1948—and two years later, when, quarantined after being exposed to polio, I lived there with my grandfather.

In the 1860s, the miller was a man named Sims, and the mantelpiece citation identifies him, without a first name, as Jesse James' father-in-law. When, in 1882, news reached these parts that Ford had shot James in the back to collect a $10,000 reward, our stouthearted miller mounted up, rode west to Kansas and killed Ford in righteous revenge. Or so I was led to believe.

To a young boy, this was heady stuff. Jesse James was America's Robin Hood; Theodore Roosevelt himself had proclaimed him such. James robbed from the rich—from flush banks and flourishing railroads—and gave to the poor. He was dashing and daring, with slicked-

The chimney (above) is all that's left of Robert Ford's Virginia home, near the author's. Ford shot James in Missouri in 1882 (left, a 19th-century engraving of the act).

TYRONE TURNER; GRANGER COLLECTION, NEW YORK

To learn about Allan Pinkerton's quest to capture Jesse James, go to Smithsonian.com/pinkerton.

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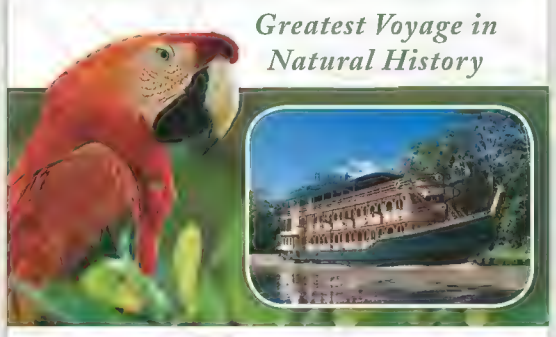

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After James died, his body lay in honor, and hundreds came to see it. But his killer collected only some of the bounty.

back hair, slouch hats, high leather boots, three-piece suits and fast stallions. As a teenager, I read comic books that had Jesse riding out of town, pistols blazing, as he rescued some damsel in distress.

In 1939, Tyrone Power, the handsomest of leading men, played him in *Jesse James*—"The epic story of the most colorful outlaw who ever lived." Even now, having seen the movie in rerelease in the '50s, I recall vividly the scene when Jesse, having put down his pistols, straightened his dear wife's framed needlepoint—askew on the wall—as the long barrel of Ford's revolver slid slowly, evilly through the doorway and exploded. Jesse turned and tumbled backward and died in that clean, tasteful way that heroes did in movies when I was growing up.

I listened to the ballad "Jesse James," the folk song that came into existence not long after James died and, it was said, contributed mightily to his legend. The verse about my perfidious neighbor went like this:

It was Robert Ford, that dirty little coward,

"Jesse James" collected and adapted by John A. Lomax and Alan Lomax TRO © 1934 (renewed) Ludlow Music Inc., New York, New York. Used by permission.

Brad Pitt, in *The Assassination of Jesse James by the Coward Robert Ford*, is the latest leading man to portray James.

I wonder how he does feel,
For he ate of Jesse's bread and he slept in
Jesse's bed,
Then laid poor Jesse in his grave.

And then the refrain, which invokes the pseudonym, Thomas Howard, that James adopted after he had supposedly given up his criminal ways and was living peaceably in St. Joseph, Missouri:

Poor Jesse had a wife to mourn
for his life,
Three children they were brave;
But that dirty little coward that shot
Mister Howard
Has laid poor Jesse in his grave.

As James' legend grew, so too did the dimensions of Ford's treachery and betrayal. The needlepoint became a portrait of James' dear mother, Zerelda. Bobby Ford became James' cousin—in fact, Ford posed as such—making the murder not only intra-gang but also intra-family. And then, in the 1930s, Woody Guthrie came along, revised the ballad, and deepened Ford's infamy by making Jesse a cuckold:

"Jesse James" written by Woody Guthrie © Copyright secured WOODY GUTHRIE PUBLICATIONS (BMI) Administered by BUG. All rights reserved. Used by permission.

WARNER BROS. PICTURES; P. 114 CORBIS

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Which is not my story, but is of an island in the kitchen or a penurious necessity to have additional counter-space where needed, and especially mobile. Given usually the existing kitchen counter-tops have fixed functional purposes (coffee maker, grinder, hot plate, the at-bat wine bottle, set-asides, preparations, rolls, pots and pans) is the problem.

Julia Child and her associate cook book authors were photographed in her kitchen at an island to demonstrate a method of grinding (from "My Life in France").

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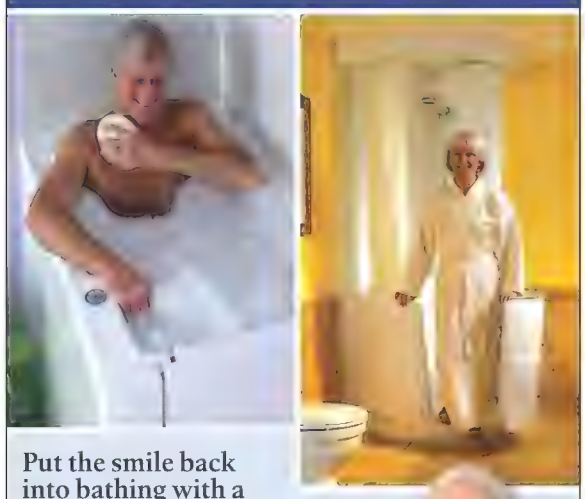

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Casey Affleck plays Robert Ford as a picked-on teenager who betrays his hero more out of fear than greed.

Now a bastard and coward called little Robert Ford
He claimed he was Frank and Jesse's friend
He made love to Jesse's wife and he took his life,
And he laid poor Jesse in his grave.

Last month, Hollywood returned to this ripe old chestnut, with the release of *The Assassination of Jesse James by the Coward Robert Ford,* starring Brad Pitt, Casey Affleck and Sam Shepard and produced by that great warper of historical epic, Ridley Scott. (Remember Scott's 2005 take on the Crusades?) One might have expected an orgy of violence in this latest retelling of this most violent of American stories, but it's surprisingly subdued. The menace is psychological, subtle . . . and effective. The film is exquisitely photographed by a Hollywood master, Roger Deakins, and its period dialogue, written by the director, Andrew Dominik, and based on the novel by Ron Hansen, draws the viewer into 19th-century America. To my delight, Casey Affleck's Robert Ford steals the show as the hero-worshiping, picked-on, psychologically benumbed teenager who betrays his hero more out of fear than greed.

WARNER BROS. PICTURES / EVERETT COLLECTION; P. 117 BRIDGEMAN ART LIBRARY

After killing James, Ford (c. 1885) was convicted of murder but pardoned. He then made a living by telling his story.

WAS JESSE JAMES really dashing and heroic? Was he contemptuous of the rich and charitable toward the poor? And was Robert Ford so horribly villainous? What is the real story?

My first dip into the history—in forays to my county historical society and in T. J. Stiles' excellent biography of James—revealed that the citation over my mantel is woefully wrong. Robert Ford grew up in the house with the chimney near ours, all right, and, yes, he killed Jesse James. But James himself had no Virginia roots and no Virginia father-in-law; he was born and raised in Missouri and spent most of his life there. (And no, he and Ford were not kin.) Ford, greedy for blood money, came late to the gang, as James and company were planning to rob a bank in Platte City, Missouri. Stiles does not tell us whether Ford slept with James' wife, but he certainly ate of Jesse's bread before he shot him, not in the back but behind the ear, on April 3, 1882.

At the time, James was reputed to be the most dangerous man in America. He had intimidated legions of sheriffs and soldiers for 15 years. Said to have had magical powers of premonition, especially with regard to danger, he had outlived countless attempts on his life and had survived

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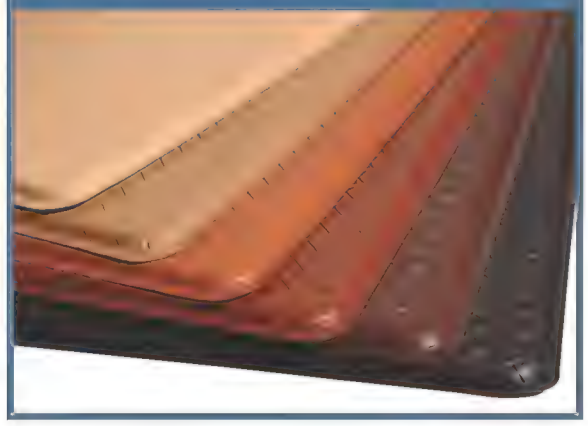

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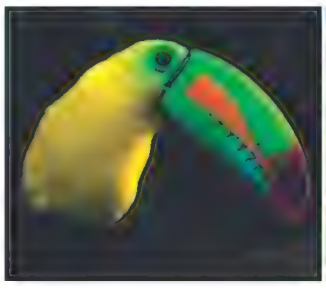

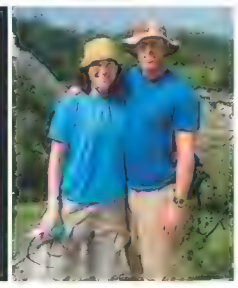

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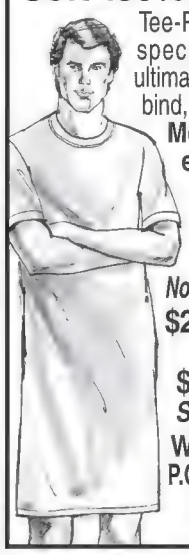

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two terrible bullet wounds to his body. His ability to escape harm, arrest and death had taken on fabled proportions. In April 1882, he had scarcely put himself out to pasture, as Tyrone Power had led me to believe. And whatever Ford's other qualities may have been, and whatever the exact circumstances of the shooting, it seems to me that he was no coward.

Robert Ford collected only a fraction of Missouri governor Thomas Crittenden's blood money—the governor decided to split it five ways, according to news reports that Stiles cites, among an assortment of lawmen and other James betrayers, including Ford's brother, Charley.

Ford was convicted of murdering James, but the trial was a sham and Crittenden pardoned him immediately. Thereafter, my neighbor made his living telling and retelling the heroic tale of how he shot Jesse James, at dime museums and the like.

I regret to say there is no basis for casting my miller, Sims, as an avenging angel. (True, Zerelda James' second husband was one Benjamin Simms, but he has no part in the James legend.) A man named Ed O'Kelley killed Ford, not in Kansas, but in Creede, Colorado, during a barroom brawl. And it happened not soon after the news of James' death reached Virginia, but ten years later, in 1892. So much for the citation from the Virginia Historic Landmarks Commission (which is now known as the Virginia Department of Historic Resources).

To many in Missouri, the killing of Jesse James was a dastardly act. After the bandit's body was taken to the town of Kearney, it lay in state (or, more accurately, "in honor," since James was most definitely not a public servant and was therefore not entitled to the "state" designation). Two weeks after the killing, Oscar Wilde stopped in St. Joseph on a celebrated lecture tour. "The Americans are certainly great hero worshippers," he wrote home on April 19, 1882, adding, in an allusion to James, "and always take their heroes from the criminal classes."

Hundreds of the curious and the admiring filed past James' casket. But James was no Robin Hood; he and his men split their loot in the woods, and it is doubtful they gave any of it away. As Stiles notes, James was a blatant racist, an unreconstructed, angry and violent secessionist who operated in a Union-controlled border state where sympathy for the Confederacy lingered after the Civil War. His passion was to undercut the war's final resolution and to maintain Southern antebellum values, including slavery, in his home state. His mother kept her former slaves, under the same conditions, into the 1880s. She was unfailingly proud of her offspring to the end.

A teenager at war's end, James watched enviously as his brother Frank joined in the blood-soaked actions of the infamous Quantrill gang. The motive of these bushwhackers was to scuttle Unionist control of Missouri, especially in the swath of slaveholding counties known as Little Dixie along the Missouri River. The gang is best known for its 1863 raid on the abolitionist town of Lawrence, Kansas, where scores of unarmed men and boys were gunned down in the streets. James later joined Bloody Bill Anderson's gang; Anderson's notoriety, apart from his penchant for scalping and otherwise maiming his victims, came from an equally atrocious incident known as the Centralia massacre, in which another Missouri town was robbed, terrorized and burned before dozens of innocents were clubbed, slaughtered and mutilated.

After the war, the James boys joined Cole Younger and his brothers to build on this bloody legacy, as Southern sympathizers glorified Jesse's derring-do and "chivalry" and ignored his killing of innocents. By cooking up the story of his altruism, they transformed a folk demon into a folk hero—a thrilling desperado with a cause. Much attuned to his standing with Southern sentimentalists, James had some success in cloaking his crimes with a higher purpose.

We get none of this in the new movie.

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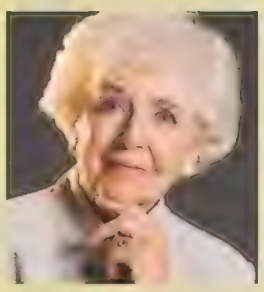
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Jesse James fits our post-9/11 definition of a terrorist. His legend-building had some success in sabotaging Reconstruction in Missouri, effectively delaying implementation of the 13th, 14th and 15th Amendments to the Constitution, which, respectively, prohibited slavery and guaranteed due process and the right to vote regardless of race. He was a bloodthirsty insurgent of the old order, cloaking his mayhem in the illusion of a crusade against the new order. And, mildly literate for a gangster, he was what we would today call media-savvy, using sympathetic newspaper editors to advance his reputation.

"Some editors call us thieves," he wrote to the *Kansas City Times*. "We are not thieves—we are bold robbers. . . . I am proud of the name, for Alexander the Great was a bold robber, and Julius Caesar, and Napoleon Bonaparte."

IF IT IS TRUE that every generation reinterprets history in the light of its experience, it is also true that individuals reinterpret the myths of their youth in later life. So, in turn, do they change their attitude toward the landmarks that memorialize those myths. Despite the considerable efforts of Brad Pitt, it is a stretch to make Jesse James into a hero. And just as hard to make Robert Ford into a coward. He is merely a gangland killer.

Are lost myths akin to lost loves? I wonder. I won't be romping as Jesse James on the lawn anymore. Since the new movie gets an R rating for "strong violence and brief sexual references," not many 8-year-olds will do so, either. If one little crook kills a master criminal who is a scourge on society, why should we care, any more than if a Mafia stoolie kills his don? What code of honor is at work here?

And still, despite all I now know about this story, I look at that lone chimney in that Virginia field with wistful pleasure every time I drive by it, and I mourn each new lost stone.

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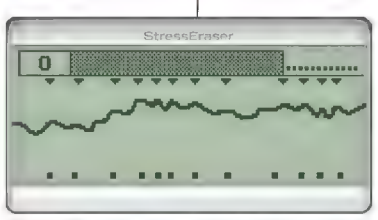

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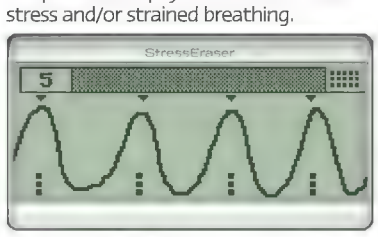

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In these lectures you will also hear about a remarkable archaeological event: the discovery in 1945 of a treasure trove of missing Gnostic scriptures at Nag Hammadi, an Egyptian village near the city of Luxor.

Consisting of 13 leather-bound volumes unearthed in an ancient grave by Bedouin camel drivers (the full story, which you will hear, resembles the plot of a bestselling adventure novel), the Nag Hammadi Library was a watershed event in the search for lost Christianities.

About Your Professor

Dr. Bart D. Ehrman is the James A. Gray Professor and Chair of the Department of Religious Studies at The University of North Carolina at Chapel Hill. He received his Masters of Divinity and Ph.D. from Princeton Theological Seminary. He has won several teaching awards, including the Students' Undergraduate Teaching Award and the Bowman and Gordon Gray Award for Excellence in Teaching. Professor Ehrman has written or edited more than 15 books, including *The New York Times* bestseller, *Misquoting Jesus,* and *Jesus: Apocalyptic Prophet of the New Millennium.*

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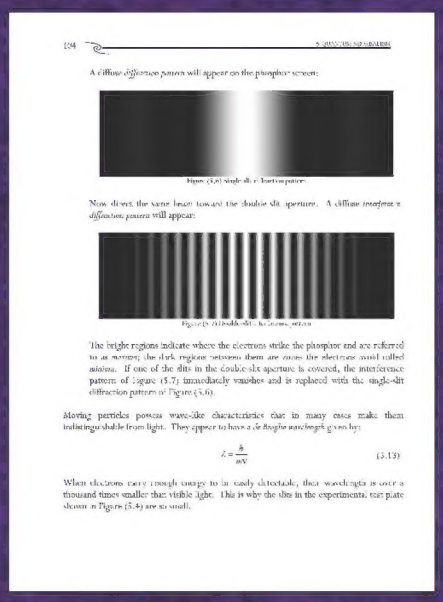


A diffuse *diffraction pattern* will appear on the phosphor screen:

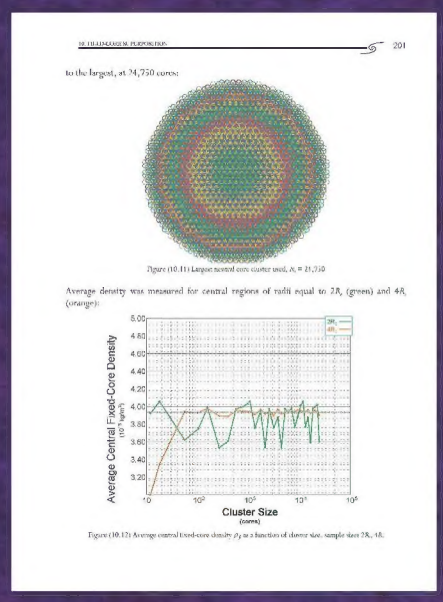
Now direct the same beam toward the double-slit aperture. A diffuse *interference diffraction pattern* will appear:

The bright regions indicate where the electrons strike the phosphor and are referred to as *maxima*; the dark regions between them are cause the electrons avoid called *minima*. If one of the slits in the double-slit aperture is covered, the interference pattern of Figure (5.7) immediately vanishes and is replaced with the single-slit diffraction pattern of Figure (5.6).

Moving particles possess wave-like characteristics that in many cases make them indistinguishable from light. They appear to have a *de Broglie wavelength* given by:

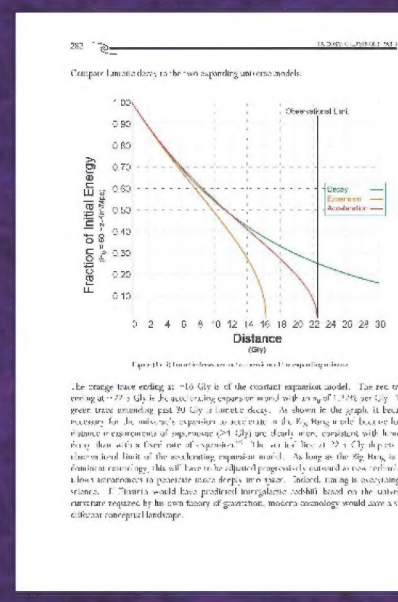
$$\lambda = \frac{h}{mV} \qquad (5.13)$$

When electrons carry enough energy to be easily detectable, their wavelengths are over a thousand times smaller than visible light. This is why the slits in the experiments, test plate shown in Figure (5.4) are so small.

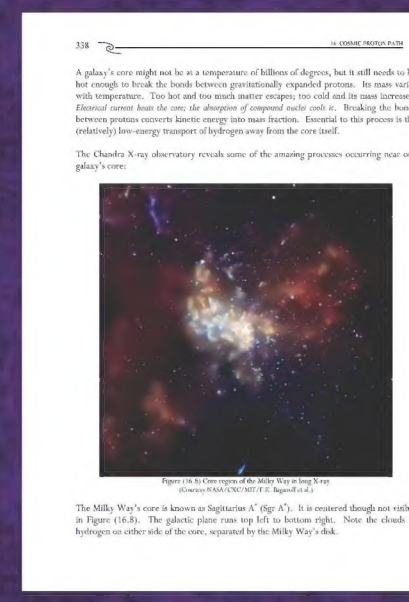


to the largest, at 74,750 cores:

Average density was measured for central regions of radii equal to $2R_0$ (green) and $4R_0$ (orange):



Compare Lanczos theory to the two expanding universe models:



A galaxy's core might not be at a temperature of billions of degrees, but it still needs to be hot enough to break the bonds between gravitationally expanded protons. Its mass varies with temperature. Too hot and too much matter escapes; too cold and its mass increases. *Electrical current heats the core; the absorption of compound nuclei cools it.* Breaking the bonds between protons converts kinetic energy into mass fraction. Essential to this process is the (relatively) low-energy transport of hydrogen away from the core itself.

The Chandra X-ray observatory reveals some of the amazing processes occurring near our galaxy's core:

The Milky Way's core is known as Sagittarius A* (Sgr A*). It is centered though not visible in Figure (16.8). The galactic plane runs top left to bottom right. Note the clouds of hydrogen on either side of the core, separated by the Milky Way's disk.

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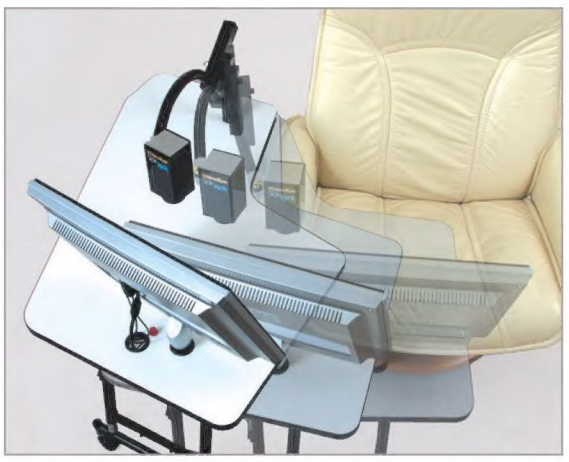

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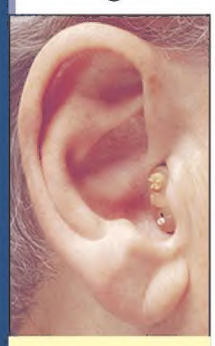

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In the Name of the Law

How to win arguments without really trying **BY RICHARD CONNIFF**

I **LIKE TO COLLECT** gratuitous opinions served up as laws of social behavior. Murphy's Law ("If anything can go wrong, it will") is the most famous, but the obscure ones are more fun. Say, for instance, that someone in an argument starts to foam at the mouth. You mildly remark, "What you're saying is a perfect instance of Benford's Law of Controversy," and it will take a Google search for the poor sap to figure out that you have insulted him: Benford's Law states that passion in any argument is inversely proportional to the amount of real information advanced.

Godwin's Law is also handy. It holds that the longer an argument drags on, the likelier someone will stoop to a Hitler or Nazi analogy. And in common practice (other than in appropriate contexts, such as discussions of genocide), when an adversary tries it, you have only to say "Godwin's Law" and a trapdoor falls open, plunging your rival into a pool of hungry crocodiles. Sweet, no?

Sweeter still, these little laws allow us to sound intellectual without having to do any homework. That's why people are always citing the Heisenberg Uncertainty Principle. That's also why they almost always get it wrong. The Uncertainty Principle actually has to do with physics, and let's just say that if you read it, your head will explode. So what's that nice idea about how observation inevitably alters the thing being observed? That's "the observer effect." But nobody calls it that because it lacks smarty-pants heft. What we really need is the Heisenberg Probability Principle, which states that anybody mentioning Heisenberg is likely a pompous twit. (And may I be the first to plead guilty as charged?)

Some of these rules actually hold precious wisdom. Hegel's Paradox, for instance, says, "Man learns from history that man learns nothing from history." And Clarke's First Law, coined by science fiction writer Arthur C. Clarke, nails the nature of wisdom: "When a distinguished but elderly scientist states that something is possible he is almost certainly right. When he states that something is impossible he is almost certainly wrong."

Once, in Ireland, I ran across a statement by a 19th-century cleric that struck me as profound: "It is almost impossible to exaggerate the complete unimportance of almost everything." I've never been able to track down the source. (But that's unimportant.) In any case, Sturgeon's Revelation, named after science fiction writer Theodore Sturgeon, gives the same idea a nice American spin: "Ninety percent of everything is crud."

The workplace has spawned more than its share of such obiter dicta. Thus the Dilbert Principle says, "The most ineffective workers are systematically moved to the place where they can do the least damage: management." But Joy's Law, coined by Sun Microsystems co-founder Bill Joy, captures every manager's sinking sense of despair: "No matter who you are, most of the smartest people work for someone else." Harried tech workers like to cite Brooks' Law, from software engineer Frederick P. Brooks: "Adding manpower to a late software project makes it later." Or as Brooks also put it, "The bearing of a child takes nine months, no matter how many women are assigned."

Impatient bosses often strike back with Parkinson's Law: "Work expands to fill the time allotted for its completion." In fact, my editor just showed up at the door to remind me that time's up.

"Don't be such a deadline Nazi," I snapped.

"Godwin's Law," he replied.

RICHARD THOMPSON